

Keokuk County Iowa

Countywide G.P.S. Survey Control Network

2003

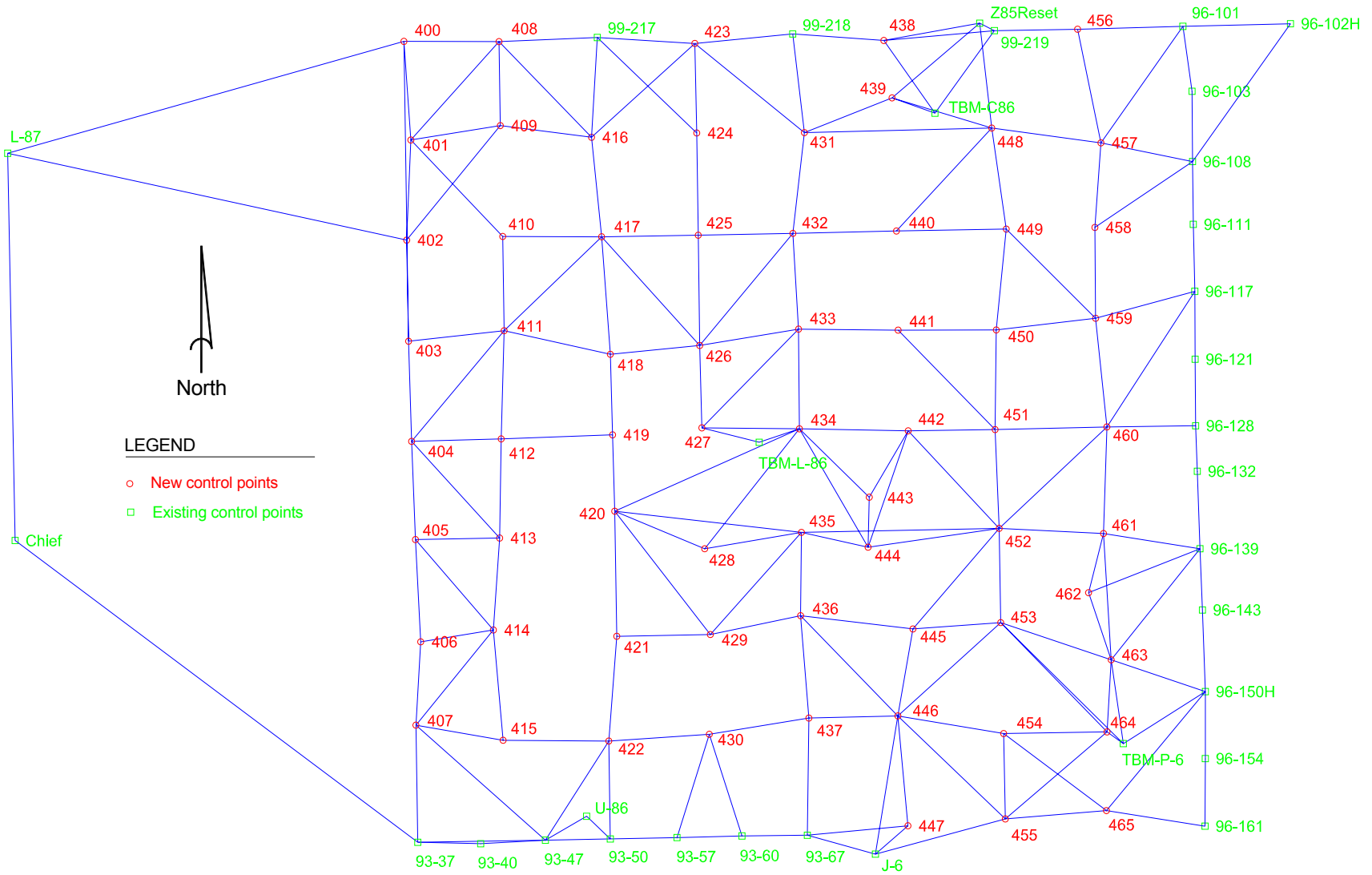
Dan Corbin, Inc.
28 River Ridge Lane
Cedar Falls, IA 50613



Cell: (319) 231-7047
Fax: (319) 266-3398
E-Mail: dcorbin@cfu.net

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Keokuk County, Iowa

GPS Vector Network

INTRODUCTION

In 2003 Keokuk County, Iowa, contracted with DC Inc. to complete a high accuracy ground control survey for the purpose of establishing a county-wide survey control system and for future use in a county wide GIS system.

Sixty six (66) new control stations were added within the County along with, three (3) existing Iowa County GPS control points, twelve (12) existing Washington County GPS control points, and seven (7) more existing Wapello County GPS control points were recovered and tied into the GPS network. An additional seven (7) NGS and USGS first, second and third order benchmarks were included in the network along with two (2) Washington County HARN position and one (1) HARN position in Mahaska County. A total of ninety eight (98) points were measured.

PROJECT REQUIREMENTS

The purpose of this survey was to establish new state plane control throughout the project area, using a new horizontal and vertical control network with GPS survey equipment and techniques. This network was horizontally referenced to the Iowa High Accuracy Reference Network (HARN) of 1996. Vertically the network was referenced to the North American Vertical Datum of 1988 (NAVD88). Because this control would be utilized for many different purposes, it was important that the network geometry be ideal for a strong GPS survey. All new point locations for control were selected with the needs of future multiple uses and GPS survey requirements in mind. In some instances, it was necessary to adjust locations because of physical obstructions or existing land features. In these instances, the network was constructed with the coverage of the county held as primary and the GPS survey needs satisfied secondly. Because both of these philosophies support good geometry the network structure was not compromised.

MONUMENTATION

To perpetuate the GPS control measurements, 66 new permanent monuments were set by the Keokuk County Engineer's Office. BERNTSEN driven aluminum rod monuments were selected for the permanent monuments. Each BERNTSEN station monument consists of one three-foot smooth rod section and one three-foot top security fluted rod section with a stamped cap fastened to the top, all constructed of aluminum material. There is a permanent magnet mounted on the underside of the monument cap for future recovery with a magnetic locator. These monuments were driven to approximately 6" below the existing ground surface. For easy access and protection, a 24" long 5" diameter PVC pipe was placed over each rod monument along with a pre-cast aluminum access cover and backfilled with sand to facilitate drainage and to minimize frost movement. For temporary positions rebar points that consist of 1/2" or 5/8" diameter 30" long deformed rebar were set. A Carsonite marker was placed as a witness point at each new permanent monument position.

The Engineer's Office from Keokuk County handled the coordination of marking the various underground utility locations at each new permanent monument site and also provided the field ties to the monuments which are included with the monument records.

RECONNAISSANCE

The most important criterion for GPS observations at any given location is a clear view to the sky. In terms of network design, it is desirable that the horizontal control be located near the perimeter and also throughout the project site if possible. With this in mind, existing HARN horizontal stations were recovered in and/or near Keokuk County along with other control that has been adjusted to the HARN. All positions in and near the county were chosen to be included in the network.

Vertical control was selected to provide as much coverage as possible, both at the periphery and in the interior of the project area. Three (3) HARN stations with vertical control and seven(7) existing NGS and USGS benchmarks were recovered and included in this survey. Three of the benchmarks were measured using offset points with the remaining benchmarks occupied directly.

FIELD SURVEY

Four Trimble 24 channel dual frequency Geodetic GPS receivers with Everest multipath mitigation and high performance low elevation satellite tracking were used in this survey. Three Trimble model 5700 receivers and one model 5800 receiver were used for the survey. GPS observations began Monday afternoon, September 1, 2003. GPS observations were made during daylight and evening hours from Monday, September 1 2003, through Friday, September 5, 2003.

Rapid static GPS techniques were utilized to minimize the time and cost of the survey. The satellite “window”, where at least six satellites were observable, was open for much of the day with only a few short periods of unacceptable coverage because of the number of satellites or bad geometry. Each measurement period during which all receivers observe satellites simultaneously lasted from 8 minutes to 100 minutes, depending on the distance being measured and the geometry of the satellite constellation.

DATA ADJUSTMENT

A total number of 212 vectors were observed and processed. Based on statistical indicators from the Trimble Geomatics Office processing software, 2 vectors were flagged as outliers, but were included in the adjustment. The final network is comprised of 98 stations and 212 baselines. All data adjustment was performed using the Trimble Geomatics Office least squares adjustment software. An initial free adjustment was performed in NAD83 to check the overall quality of the GPS data and the nature of the control. The initial unconstrained (free) adjustment yielded baseline precisions which ranged from 1:250,000 to 1:2,500,000. Once the horizontal and vertical control was verified, subsequent adjustments were performed to arrive at the optimal solutions for each datum.

NAD83 (1996)

The initial free adjustment was performed holding point 96-150H fixed horizontally with the vertical adjustment disabled. Coordinate values on the other HARN control stations was then checked against the published values. Because all data fit so well the other HARN-referenced stations from surrounding Counties were added to the network and a new adjustment performed. After each adjustment a comparison of adjusted coordinates vs. published values was made. By holding the all existing HARN

stations fixed, and the control that was adjusted to the HARN, the precision of the “fixed” adjustment degraded very little.

Once we were satisfied with the horizontal adjustment, we locked the horizontal positions and concentrated on the vertical adjustment. The Geoid 99 Central zone was utilized to provide a model of the height of the Geoid. Adjustments were then performed locking on to the vertical control stations one at a time. Elevations on the benchmarks were then checked against the published values.

Prior to the final adjustment a comparison was made between the adjacent counties existing published monuments and the new Keokuk County network positions for the same monuments. The existing monument positions (horizontal and vertical) from Iowa, Washington, and Wapello Co all compared very closely to the new Keokuk County network positions, therefore the new network was locked to the existing published monument positions.

A final adjustment of both horizontal and vertical was then performed. All of the horizontal control points were held fixed in x and y and all vertical control were held fixed in z. This fully constrained adjustment solved for scale and rotation. In the final adjusted network, 100% of the adjusted vectors have an estimated error of x, y and z baseline precision after adjustment was between 1:107,000 to 1:2,478,000. All of the processed data and error factors were computed using a 95% confidence level factor. The results are well in excess of the first-order precision.

CONCLUSION

All measured point accuracies exceed first-order standards. The control point locations are within (± 0.05 ft) horizontal position and within ± 0.10 ft. vertically for benchmark use.

Network Adjustment Report

Project : KeokukFinal

User name	gbrown	Date & Time	1:10:24 PM 1/8/2004
Coordinate System	US State Plane 1983	Zone	Iowa South 1402
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	Geoid Model	GEOID99 (Conus)
Coordinate Units	US survey feet		
Distance Units	US survey feet		
Height Units	US survey feet		

Adjustment Style Settings - 95% Confidence Limits

Residual Tolerances

To End Iterations : 0.000033sft

Final Convergence Cutoff : 0.016404sft

Covariance Display

Horizontal

Propagated Linear Error [E] : U.S.

Constant Term [C] : 0.00000000sft

Scale on Linear Error [S] : 1.96

Three-Dimensional

Propagated Linear Error [E] : U.S.

Constant Term [C] : 0.00000000sft

Scale on Linear Error [S] : 1.96

Height Errors were used in the calculations.

Adjustment Controls

Compute Correlations for Geoid : True

Horizontal and Vertical adjustment performed

Set-up Errors

GPS

Error in Height of Antenna : 0.015sft

Centering Error : 0.015sft

Statistical Summary

Successful Adjustment in 1 iteration(s)

Network Reference Factor : 0.98

Chi Square Test ($\alpha=95\%$) : PASS

Degrees of Freedom : 405.00

GPS Observation Statistics

Reference Factor : 0.98

Redundancy Number (r) : 378.55

Geoid Model Statistics

Reference Factor : 1.01

Redundancy Number (r) : 26.45

Weighting Strategies

GPS Observations

User-defined Scalar Applied to All Observations

Scalar : 0.97

Geoid Observations

User-defined Scalar Applied to All Observations

Scalar : 0.46

Adjusted Coordinates

Adjustment performed in **NAD 1983 (Conus)**

Number of Points : 98
Number of Constrained Points : 32
Horizontal Only : 1
Elevation Only : 14
Horizontal and Elevation Only : 17

Adjusted Grid Coordinates

Errors are reported using 1.96σ .

Point Name	Northing	N error	Easting	E error	Elevation	e error	Fix
457	535825.250sft	0.021sft	2051448.176sft	0.021sft	824.857sft	0.135sft	
456	553799.571sft	0.025sft	2047656.330sft	0.025sft	809.107sft	0.127sft	
99-219	553571.770sft	0.000sft	2034168.450sft	0.000sft	833.440sft	0.000sft	N E e
96-150H	449022.440sft	0.000sft	2068374.790sft	0.000sft	639.830sft	0.000sft	N E e
463	454048.308sft	0.018sft	2053110.942sft	0.018sft	732.537sft	0.129sft	
TBM-P-6	440789.009sft	0.023sft	2055068.711sft	0.023sft	666.520sft	0.000sft	e
460	490890.717sft	0.019sft	2052410.400sft	0.019sft	795.226sft	0.145sft	
459	508075.096sft	0.023sft	2050585.989sft	0.023sft	809.150sft	0.150sft	
96-117	512337.400sft	0.000sft	2066668.370sft	0.000sft	794.480sft	0.000sft	N E e
458	522451.009sft	0.027sft	2050464.845sft	0.026sft	818.370sft	0.146sft	
96-101	554256.090sft	0.000sft	2064731.480sft	0.000sft	713.300sft	0.000sft	N E e
96-102H	554673.280sft	0.000sft	2082177.657sft	0.000sft	748.607sft	0.187sft	N E
438	552024.146sft	0.023sft	2016254.200sft	0.023sft	841.928sft	0.120sft	
99-218	553057.160sft	0.000sft	2001471.280sft	0.000sft	828.150sft	0.000sft	N E e
99-217	552493.610sft	0.000sft	1969782.930sft	0.000sft	904.740sft	0.000sft	N E e
424	537390.023sft	0.028sft	1985916.047sft	0.028sft	777.328sft	0.159sft	
93-40	424960.815sft	0.049sft	1950874.275sft	0.048sft	805.460sft	0.000sft	e
93-37	425189.932sft	0.044sft	1940688.330sft	0.044sft	793.450sft	0.000sft	e
93-47	425515.093sft	0.042sft	1961371.055sft	0.041sft	817.540sft	0.000sft	e
414	458772.580sft	0.039sft	1952947.467sft	0.038sft	793.362sft	0.199sft	

415	441321.056sft	0.042sft	1954514.282sft	0.042sft	828.329sft	0.153sft	
405	473070.628sft	0.038sft	1940305.320sft	0.038sft	799.447sft	0.222sft	
407	443712.928sft	0.040sft	1940381.389sft	0.039sft	839.888sft	0.169sft	
406	456894.717sft	0.043sft	1941165.167sft	0.042sft	786.980sft	0.203sft	
413	473311.614sft	0.036sft	1953956.899sft	0.035sft	759.366sft	0.214sft	
93-50	425712.722sft	0.042sft	1971897.603sft	0.041sft	816.440sft	0.000sft	e
U-86	429298.027sft	0.049sft	1968059.744sft	0.049sft	822.590sft	0.000sft	e
422	441198.759sft	0.039sft	1971653.907sft	0.038sft	788.974sft	0.143sft	
418	502378.130sft	0.032sft	1971906.674sft	0.032sft	822.601sft	0.196sft	
419	489637.439sft	0.035sft	1972267.097sft	0.035sft	781.426sft	0.191sft	
420	477560.207sft	0.031sft	1972617.067sft	0.030sft	781.829sft	0.190sft	
412	488993.937sft	0.034sft	1954213.982sft	0.034sft	808.906sft	0.220sft	
403	504448.879sft	0.034sft	1939193.338sft	0.034sft	782.139sft	0.231sft	
404	488607.546sft	0.034sft	1939678.722sft	0.034sft	754.224sft	0.230sft	
411	506110.281sft	0.030sft	1954682.934sft	0.029sft	817.912sft	0.219sft	
410	521022.021sft	0.032sft	1954456.824sft	0.032sft	844.828sft	0.211sft	
417	520963.869sft	0.026sft	1970489.357sft	0.026sft	854.430sft	0.193sft	
401	536280.193sft	0.027sft	1939566.957sft	0.027sft	870.611sft	0.213sft	
408	551844.467sft	0.027sft	1953863.212sft	0.027sft	818.191sft	0.169sft	
425	521215.505sft	0.027sft	1986155.111sft	0.026sft	845.446sft	0.181sft	
427	490742.704sft	0.029sft	1986751.502sft	0.029sft	787.211sft	0.135sft	
416	536711.025sft	0.025sft	1968852.572sft	0.024sft	884.700sft	0.160sft	
423	551549.629sft	0.022sft	1985604.479sft	0.021sft	888.709sft	0.130sft	
431	537441.138sft	0.024sft	2003373.318sft	0.023sft	781.635sft	0.145sft	
432	521504.551sft	0.026sft	2001504.854sft	0.026sft	841.242sft	0.173sft	
426	503775.014sft	0.027sft	1986396.840sft	0.027sft	805.547sft	0.167sft	
434	490591.216sft	0.026sft	2002554.499sft	0.025sft	700.619sft	0.116sft	
TBM-L-86	488465.504sft	0.038sft	1996036.340sft	0.038sft	793.040sft	0.000sft	e
435	474208.785sft	0.028sft	2002891.756sft	0.027sft	689.461sft	0.158sft	
428	471615.182sft	0.036sft	1987200.024sft	0.035sft	731.782sft	0.169sft	
429	458050.627sft	0.034sft	1988110.912sft	0.033sft	756.682sft	0.178sft	
436	461030.967sft	0.029sft	2002755.149sft	0.029sft	774.729sft	0.176sft	

421	457767.596sft	0.038sft	1972948.174sft	0.038sft	776.406sft	0.187sft	
93-57	425930.049sft	0.045sft	1982705.573sft	0.044sft	791.570sft	0.000sft	e
93-60	426182.652sft	0.043sft	1993253.566sft	0.041sft	808.310sft	0.000sft	e
430	442268.739sft	0.040sft	1987953.610sft	0.039sft	807.627sft	0.150sft	
446	445171.903sft	0.027sft	2018522.939sft	0.027sft	774.757sft	0.165sft	
437	444836.418sft	0.033sft	2004101.937sft	0.033sft	794.483sft	0.159sft	
93-67	426296.444sft	0.038sft	2003840.000sft	0.037sft	808.030sft	0.000sft	e
J-6	423314.457sft	0.036sft	2014884.475sft	0.035sft	812.690sft	0.000sft	e
447	427793.314sft	0.041sft	2020152.546sft	0.041sft	800.420sft	0.116sft	
455	428877.564sft	0.029sft	2035941.683sft	0.029sft	781.824sft	0.153sft	
454	442387.896sft	0.030sft	2035682.348sft	0.030sft	749.801sft	0.157sft	
465	430198.991sft	0.025sft	2052339.488sft	0.025sft	766.430sft	0.127sft	
96-161	427735.990sft	0.000sft	2068328.170sft	0.000sft	748.910sft	0.000sft	N E e
453	459936.575sft	0.024sft	2035191.964sft	0.024sft	733.649sft	0.175sft	
464	442645.417sft	0.026sft	2052434.311sft	0.026sft	746.353sft	0.083sft	
96-139	471619.720sft	0.000sft	2067502.100sft	0.000sft	749.260sft	0.000sft	N E e
462	464670.560sft	0.024sft	2049440.179sft	0.023sft	637.156sft	0.153sft	
461	474028.044sft	0.020sft	2051868.659sft	0.019sft	743.986sft	0.148sft	
444	471865.910sft	0.029sft	2013694.056sft	0.028sft	692.978sft	0.176sft	
452	474840.566sft	0.022sft	2034953.547sft	0.022sft	767.310sft	0.181sft	
442	490269.571sft	0.026sft	2020196.628sft	0.025sft	739.984sft	0.176sft	
443	479769.334sft	0.033sft	2013887.333sft	0.033sft	757.070sft	0.170sft	
451	490471.889sft	0.026sft	2034289.669sft	0.026sft	786.116sft	0.182sft	
96-108	532868.130sft	0.000sft	2066305.430sft	0.000sft	775.380sft	0.000sft	N E e
433	506360.185sft	0.028sft	2002419.072sft	0.027sft	824.449sft	0.163sft	
445	458932.167sft	0.029sft	2020969.708sft	0.029sft	700.974sft	0.182sft	
450	506230.476sft	0.028sft	2034475.696sft	0.028sft	816.881sft	0.178sft	
448	538175.378sft	0.024sft	2033743.414sft	0.023sft	786.819sft	0.121sft	
TBM-C86	540531.404sft	0.028sft	2024542.437sft	0.028sft	739.040sft	0.000sft	e
441	506201.539sft	0.032sft	2018563.524sft	0.032sft	770.917sft	0.178sft	
449	522191.296sft	0.026sft	2036096.686sft	0.026sft	832.417sft	0.162sft	
439	542946.377sft	0.027sft	2017572.452sft	0.027sft	847.134sft	0.108sft	

Z85Reset	554756.865sft	0.025sft	2031793.094sft	0.025sft	774.580sft	0.000sft	e
440	521886.546sft	0.038sft	2018291.670sft	0.037sft	838.240sft	0.167sft	
L-87	534179.958sft	0.000sft	1874202.764sft	0.000sft	864.190sft	0.000sft	N E e
Chief	472921.983sft	0.039sft	1875405.250sft	0.038sft	846.420sft	0.000sft	e
402	520438.214sft	0.027sft	1938885.992sft	0.027sft	845.834sft	0.224sft	
409	538558.187sft	0.028sft	1954069.950sft	0.028sft	890.636sft	0.184sft	
400	551880.252sft	0.029sft	1938437.346sft	0.029sft	874.360sft	0.215sft	
96-154	438429.110sft	0.000sft	2068370.560sft	0.000sft	743.830sft	0.000sft	N E e
96-103	543979.430sft	0.000sft	2066212.380sft	0.000sft	787.830sft	0.000sft	N E e
96-111	522933.360sft	0.000sft	2066418.420sft	0.000sft	814.320sft	0.000sft	N E e
96-121	501600.550sft	0.000sft	2066723.260sft	0.000sft	794.650sft	0.000sft	N E e
96-128	491082.580sft	0.000sft	2066789.260sft	0.000sft	780.230sft	0.000sft	N E e
96-132	483871.170sft	0.000sft	2067072.590sft	0.000sft	747.550sft	0.000sft	N E e
96-143	461935.570sft	0.000sft	2067908.610sft	0.000sft	691.490sft	0.000sft	N E e

Adjusted Geodetic Coordinates

Errors are reported using 1.96σ .

Point Name	Latitude	N error	Longitude	E error	Height	h error	Fix
457	41°27'39.47840"N	0.021sft	92°00'01.09386"W	0.021sft	718.368sft	0.429sft	
456	41°30'37.68489"N	0.025sft	92°00'46.85443"W	0.025sft	702.761sft	0.449sft	
99-219	41°30'37.67480"N	0.000sft	92°03'44.16861"W	0.000sft	727.270sft	0.432sft	Lat Long e
96-150H	41°13'19.01716"N	0.000sft	91°56'39.19979"W	0.000sft	532.575sft	0.451sft	Lat Long e
463	41°14'11.31838"N	0.018sft	91°59'57.78679"W	0.018sft	625.409sft	0.423sft	
TBM-P-6	41°11'59.99159"N	0.023sft	91°59'35.17105"W	0.023sft	559.316sft	0.440sft	e
460	41°20'15.40983"N	0.019sft	91°59'58.63722"W	0.019sft	688.415sft	0.404sft	
459	41°23'05.48486"N	0.023sft	92°00'18.67980"W	0.023sft	702.492sft	0.406sft	
96-117	41°23'44.80735"N	0.000sft	91°56'46.72821"W	0.000sft	687.629sft	0.434sft	Lat Long e
458	41°25'27.52390"N	0.027sft	92°00'17.02694"W	0.026sft	711.818sft	0.415sft	
96-101	41°30'39.25031"N	0.000sft	91°57'02.34206"W	0.000sft	606.761sft	0.473sft	Lat Long e
96-102H	41°30'40.23828"N	0.000sft	91°53'12.96028"W	0.000sft	641.938sft	0.505sft	Lat Long
438	41°30'25.24486"N	0.023sft	92°07'39.93070"W	0.023sft	735.980sft	0.413sft	
99-218	41°30'37.70878"N	0.000sft	92°10'54.00365"W	0.000sft	722.467sft	0.405sft	Lat Long e

99-217	41°30'36.67818"N	0.000sft	92°17'50.58795"W	0.000sft	799.275sft	0.399sft	Lat Long e
424	41°28'05.21017"N	0.028sft	92°14'21.42969"W	0.028sft	671.722sft	0.377sft	
93-40	41°09'39.20354"N	0.049sft	92°22'20.83657"W	0.048sft	698.575sft	0.421sft	e
93-37	41°09'42.75045"N	0.044sft	92°24'33.96376"W	0.044sft	686.670sft	0.427sft	e
93-47	41°09'43.31264"N	0.042sft	92°20'03.51258"W	0.041sft	710.653sft	0.414sft	e
414	41°15'12.99521"N	0.039sft	92°21'47.95640"W	0.038sft	686.908sft	0.372sft	
415	41°12'20.37330"N	0.042sft	92°21'30.44263"W	0.042sft	721.671sft	0.393sft	
405	41°17'35.85751"N	0.038sft	92°24'31.11672"W	0.038sft	693.224sft	0.372sft	
407	41°12'45.79637"N	0.040sft	92°24'34.94102"W	0.039sft	733.328sft	0.400sft	
406	41°14'55.93470"N	0.043sft	92°24'22.51756"W	0.042sft	680.554sft	0.384sft	
413	41°17'36.50754"N	0.036sft	92°21'32.24413"W	0.035sft	653.104sft	0.360sft	
93-50	41°09'43.84849"N	0.042sft	92°17'45.85921"W	0.041sft	709.406sft	0.410sft	e
U-86	41°10'19.79284"N	0.049sft	92°18'35.39185"W	0.049sft	715.781sft	0.406sft	e
422	41°12'16.88191"N	0.039sft	92°17'46.24304"W	0.038sft	682.219sft	0.385sft	
418	41°22'21.27963"N	0.032sft	92°17'31.82231"W	0.032sft	716.717sft	0.348sft	
419	41°20'15.35804"N	0.035sft	92°17'29.41696"W	0.035sft	675.363sft	0.347sft	
420	41°18'15.99166"N	0.031sft	92°17'27.03029"W	0.030sft	675.574sft	0.350sft	
412	41°20'11.41121"N	0.034sft	92°21'26.17741"W	0.034sft	702.876sft	0.355sft	
403	41°22'46.00457"N	0.034sft	92°24'40.53821"W	0.034sft	676.320sft	0.369sft	
404	41°20'09.43675"N	0.034sft	92°24'36.77491"W	0.034sft	648.202sft	0.366sft	
411	41°23'00.45332"N	0.030sft	92°21'17.07597"W	0.029sft	712.110sft	0.356sft	
410	41°25'27.80362"N	0.032sft	92°21'17.46666"W	0.032sft	739.210sft	0.366sft	
417	41°25'25.09049"N	0.026sft	92°17'47.03782"W	0.026sft	748.775sft	0.359sft	
401	41°28'00.43760"N	0.027sft	92°24'30.39755"W	0.027sft	765.180sft	0.392sft	
408	41°30'32.38716"N	0.027sft	92°21'19.93495"W	0.027sft	712.834sft	0.404sft	
425	41°25'25.38397"N	0.027sft	92°14'21.36909"W	0.026sft	739.712sft	0.359sft	
427	41°20'24.24583"N	0.029sft	92°14'19.34132"W	0.029sft	681.117sft	0.346sft	
416	41°28'00.88526"N	0.025sft	92°18'05.67375"W	0.024sft	779.180sft	0.376sft	
423	41°30'25.13945"N	0.022sft	92°14'22.82707"W	0.021sft	783.167sft	0.397sft	
431	41°28'03.15217"N	0.024sft	92°10'32.13077"W	0.023sft	675.836sft	0.383sft	
432	41°25'25.99264"N	0.026sft	92°10'59.84027"W	0.026sft	735.384sft	0.364sft	
426	41°22'33.04862"N	0.027sft	92°14'21.51430"W	0.027sft	699.619sft	0.348sft	

434	41°20'20.43353"N	0.026sft	92°10'52.21567"W	0.025sft	594.419sft	0.351sft	
TBM-L-86	41°20'00.40034"N	0.038sft	92°12'18.07369"W	0.038sft	686.885sft	0.351sft	e
435	41°17'38.53382"N	0.028sft	92°10'51.05180"W	0.027sft	582.984sft	0.356sft	
428	41°17'15.21047"N	0.036sft	92°14'17.09963"W	0.035sft	625.358sft	0.353sft	
429	41°15'01.06706"N	0.034sft	92°14'07.75167"W	0.033sft	650.028sft	0.364sft	
436	41°15'28.36379"N	0.029sft	92°10'55.45696"W	0.029sft	668.039sft	0.365sft	
421	41°15'00.40122"N	0.038sft	92°17'26.29784"W	0.038sft	669.842sft	0.365sft	
93-57	41°09'44.49350"N	0.045sft	92°15'24.52243"W	0.044sft	684.499sft	0.409sft	e
93-60	41°09'45.47668"N	0.043sft	92°13'06.57688"W	0.041sft	701.180sft	0.410sft	e
430	41°12'25.16934"N	0.040sft	92°14'12.81117"W	0.039sft	700.757sft	0.383sft	
446	41°12'49.27242"N	0.027sft	92°07'32.30444"W	0.027sft	667.796sft	0.393sft	
437	41°12'48.16634"N	0.033sft	92°10'41.04701"W	0.033sft	687.567sft	0.384sft	
93-67	41°09'45.03675"N	0.038sft	92°10'48.15520"W	0.037sft	700.842sft	0.413sft	e
J-6	41°09'13.89464"N	0.036sft	92°08'24.37882"W	0.035sft	705.602sft	0.423sft	e
447	41°09'57.32454"N	0.041sft	92°07'14.58952"W	0.041sft	693.339sft	0.421sft	
455	41°10'05.51125"N	0.029sft	92°03'47.93407"W	0.029sft	674.673sft	0.432sft	
454	41°12'19.02844"N	0.030sft	92°03'48.40718"W	0.030sft	642.733sft	0.413sft	
465	41°10'15.83466"N	0.025sft	92°00'13.25311"W	0.025sft	659.189sft	0.450sft	
96-161	41°09'48.73175"N	0.000sft	91°56'44.78699"W	0.000sft	641.571sft	0.476sft	Lat Long e
453	41°15'12.47876"N	0.024sft	92°03'51.03240"W	0.024sft	626.706sft	0.394sft	
464	41°12'18.78114"N	0.026sft	92°00'09.21160"W	0.026sft	639.176sft	0.434sft	
96-139	41°17'02.41250"N	0.000sft	91°56'45.33529"W	0.000sft	642.124sft	0.434sft	Lat Long e
462	41°15'56.88123"N	0.024sft	92°00'43.44977"W	0.023sft	530.127sft	0.409sft	
461	41°17'28.91388"N	0.020sft	92°00'09.54347"W	0.019sft	637.025sft	0.407sft	
444	41°17'13.74485"N	0.029sft	92°08'30.02800"W	0.028sft	586.366sft	0.364sft	
452	41°17'39.75880"N	0.022sft	92°03'50.93252"W	0.022sft	660.533sft	0.384sft	
442	41°20'14.54872"N	0.026sft	92°07'01.02481"W	0.025sft	633.553sft	0.364sft	
443	41°18'31.79613"N	0.033sft	92°08'25.87842"W	0.033sft	650.572sft	0.362sft	
451	41°20'14.29243"N	0.026sft	92°03'56.25199"W	0.026sft	679.532sft	0.379sft	
96-108	41°27'07.68947"N	0.000sft	91°56'46.67808"W	0.000sft	668.748sft	0.450sft	Lat Long e
433	41°22'56.24084"N	0.028sft	92°10'50.85570"W	0.027sft	718.432sft	0.354sft	
445	41°15'04.83354"N	0.029sft	92°06'57.42791"W	0.029sft	594.131sft	0.380sft	

450	41°22'49.94333"N	0.028sft	92°03'50.40317"W	0.028sft	710.425sft	0.383sft	
448	41°28'05.64593"N	0.024sft	92°03'53.09376"W	0.023sft	680.535sft	0.409sft	
TBM-C86	41°28'30.40336"N	0.028sft	92°05'53.44176"W	0.028sft	632.855sft	0.404sft	e
441	41°22'52.20048"N	0.032sft	92°07'19.12273"W	0.032sft	664.682sft	0.366sft	
449	41°25'27.35573"N	0.026sft	92°03'25.66856"W	0.026sft	726.047sft	0.395sft	
439	41°28'55.36049"N	0.027sft	92°07'24.49438"W	0.027sft	741.103sft	0.400sft	
Z85Reset	41°30'49.76881"N	0.025sft	92°04'15.13088"W	0.025sft	668.422sft	0.431sft	e
440	41°25'27.19744"N	0.038sft	92°07'19.42914"W	0.037sft	732.128sft	0.377sft	
L-87	41°27'46.90668"N	0.000sft	92°38'49.22156"W	0.000sft	758.817sft	0.483sft	Lat Long e
Chief	41°17'41.56386"N	0.039sft	92°38'41.33842"W	0.038sft	740.548sft	0.469sft	e
402	41°25'24.01100"N	0.027sft	92°24'41.94532"W	0.027sft	740.223sft	0.377sft	
409	41°28'21.10101"N	0.028sft	92°21'19.51572"W	0.028sft	785.194sft	0.385sft	
400	41°30'34.69660"N	0.029sft	92°24'42.67103"W	0.029sft	769.051sft	0.415sft	
96-154	41°11'34.36429"N	0.000sft	91°56'41.73342"W	0.000sft	636.510sft	0.462sft	Lat Long e
96-103	41°28'57.47052"N	0.000sft	91°56'45.29292"W	0.000sft	681.217sft	0.462sft	Lat Long e
96-111	41°25'29.52671"N	0.000sft	91°56'47.52444"W	0.000sft	707.587sft	0.441sft	Lat Long e
96-121	41°21'58.72987"N	0.000sft	91°56'48.52357"W	0.000sft	687.745sft	0.431sft	Lat Long e
96-128	41°20'14.81202"N	0.000sft	91°56'50.12048"W	0.000sft	673.241sft	0.429sft	Lat Long e
96-132	41°19'03.52071"N	0.000sft	91°56'48.09487"W	0.000sft	640.514sft	0.430sft	Lat Long e
96-143	41°15'26.67017"N	0.000sft	91°56'42.27880"W	0.000sft	584.274sft	0.440sft	Lat Long e

Adjusted Observations

Adjustment performed in **NAD 1983 (Conus)**

GPS Observations

GPS Transformation Group: <GPS Default>

Deflection in Longitude : 0°00'00.1520" (1.96σ) : 0°00'00.6112"

Deflection in Latitude : 0°00'00.0966" (1.96σ) : 0°00'00.6807"

Azimuth Rotation : -0°00'00.0004" (1.96σ) : 0°00'00.0422"

Network Scale : 0.99999963 (1.96σ) : 0.00000020

Number of Observations : 212

Number of Outliers : 2

Observation Adjustment (Critical Tau = 3.95). Any outliers are in **red**.

Obs. ID	From Pt.	To Pt.		Observation	A-posteriori Error (1.96σ)	Residual	Stand. Residual
B4	99-219	456	Az.	89°58'45.6301"	0°00'00.3892"	0°00'01.0944"	4.28
			ΔHt.	-24.518sft	0.038sft	-0.010sft	-0.71
			Dist.	13490.299sft	0.025sft	0.004sft	0.23
B63	408	99-217	Az.	88°25'07.4571"	0°00'00.3494"	-0°00'00.8499"	-4.13
			ΔHt.	86.429sft	0.034sft	0.008sft	0.49
			Dist.	15933.534sft	0.027sft	0.026sft	1.66
B290	L-87	402	Az.	102°33'19.6781"	0°00'00.0907"	-0°00'00.1732"	-3.70
			ΔHt.	-18.648sft	0.035sft	-0.034sft	-2.53
			Dist.	66129.613sft	0.029sft	-0.016sft	-1.04
B271	TBM-C86	439	Az.	290°02'01.3004"	0°00'00.8588"	-0°00'01.4168"	-3.28
			ΔHt.	108.254sft	0.034sft	0.047sft	2.84
			Dist.	7376.794sft	0.030sft	-0.007sft	-0.46
B305	Chief	93-37	Az.	126°44'08.9701"	0°00'00.0976"	-0°00'00.0654"	-2.21
			ΔHt.	-53.948sft	0.045sft	0.044sft	3.12
			Dist.	80875.802sft	0.037sft	-0.024sft	-2.17
B264	99-219	TBM-C86	Az.	217°22'50.7045"	0°00'00.3509"	-0°00'00.0665"	-0.32

			ΔHt.	-94.414sft	0.033sft	0.056sft	3.00
			Dist.	16208.991sft	0.028sft	0.044sft	2.65
B278	448	457	Az.	98°30'23.4762"	0°00'00.3178"	0°00'00.5666"	2.99
			ΔHt.	37.819sft	0.033sft	-0.012sft	-0.73
			Dist.	17860.785sft	0.027sft	-0.002sft	-0.10
B289	L-87	Chief	Az.	179°26'14.2814"	0°00'00.1245"	0°00'00.0125"	0.34
			ΔHt.	-18.298sft	0.043sft	0.036sft	2.85
			Dist.	61272.600sft	0.038sft	-0.033sft	-2.97
B2	457	456	Az.	349°04'31.7194"	0°00'00.3157"	-0°00'00.1104"	-0.61
			ΔHt.	-15.596sft	0.035sft	-0.020sft	-1.05
			Dist.	18370.644sft	0.028sft	0.048sft	2.94
B32	414	407	Az.	220°35'27.7685"	0°00'00.2780"	-0°00'00.1131"	-0.67
			ΔHt.	46.423sft	0.029sft	-0.047sft	-2.80
			Dist.	19614.758sft	0.026sft	0.004sft	0.27
B331	96-150H	96-154	Az.	181°02'51.6157"	0°00'00.0422"	0°00'00.5552"	1.36
			ΔHt.	103.930sft	0.035sft	0.018sft	1.47
			Dist.	10593.874sft	0.002sft	0.058sft	2.75
B310	L-87	400	Az.	75°09'19.8697"	0°00'00.0933"	-0°00'00.1245"	-2.75
			ΔHt.	10.194sft	0.037sft	0.010sft	0.69
			Dist.	66631.276sft	0.030sft	0.024sft	1.66
B171	433	432	Az.	357°24'51.8056"	0°00'00.3583"	0°00'00.0257"	0.11
			ΔHt.	16.959sft	0.031sft	-0.057sft	-2.65
			Dist.	15172.619sft	0.027sft	0.016sft	0.92
B177	435	420	Az.	277°11'09.4055"	0°00'00.1623"	0°00'00.1971"	1.62
			ΔHt.	92.614sft	0.026sft	-0.050sft	-2.63
			Dist.	30461.143sft	0.024sft	-0.017sft	-0.97
B302	409	416	Az.	97°52'34.7350"	0°00'00.4101"	-0°00'00.2972"	-1.46
			ΔHt.	-6.026sft	0.033sft	-0.037sft	-2.52
			Dist.	14898.181sft	0.029sft	0.002sft	0.16
B191	464	455	Az.	231°07'53.8627"	0°00'00.2658"	-0°00'00.1374"	-0.77
			ΔHt.	35.503sft	0.032sft	0.010sft	0.41

			Dist.	21485.061sft	0.028sft	0.047sft	2.49
B235	446	436	Az.	316°04'14.3639"	0°00'00.1974"	0°00'00.0949"	0.55
			ΔHt.	0.262sft	0.024sft	-0.055sft	-2.48
			Dist.	22364.798sft	0.021sft	-0.006sft	-0.32
B23	99-217	424	Az.	133°54'15.5602"	0°00'00.2664"	0°00'00.3742"	2.48
			ΔHt.	-127.571sft	0.034sft	-0.027sft	-1.69
			Dist.	22100.532sft	0.028sft	-0.010sft	-0.59
B68	425	424	Az.	359°59'01.1706"	0°00'00.3863"	0°00'00.4399"	2.40
			ΔHt.	-67.982sft	0.034sft	0.025sft	1.89
			Dist.	16176.967sft	0.031sft	0.029sft	2.00
B298	408	409	Az.	179°51'44.6152"	0°00'00.4264"	0°00'00.2751"	1.13
			ΔHt.	72.354sft	0.030sft	-0.037sft	-2.32
			Dist.	13288.399sft	0.028sft	0.005sft	0.33
B307	400	408	Az.	90°50'58.4319"	0°00'00.3841"	-0°00'00.4441"	-2.20
			ΔHt.	-56.228sft	0.033sft	0.000sft	0.01
			Dist.	15426.474sft	0.029sft	0.020sft	1.35
B79	425	426	Az.	180°02'10.9151"	0°00'00.2860"	0°00'00.2499"	1.20
			ΔHt.	-40.101sft	0.028sft	-0.050sft	-2.17
			Dist.	17442.954sft	0.024sft	0.010sft	0.54
B83	435	428	Az.	261°29'01.3138"	0°00'00.3764"	-0°00'00.2471"	-1.04
			ΔHt.	42.385sft	0.032sft	0.047sft	2.15
			Dist.	15905.425sft	0.028sft	0.005sft	0.28
B30	414	415	Az.	175°37'06.2942"	0°00'00.3529"	0°00'00.0391"	0.22
			ΔHt.	34.754sft	0.035sft	0.042sft	2.13
			Dist.	17522.613sft	0.030sft	-0.002sft	-0.15
B16	96-101	457	Az.	216°48'04.8635"	0°00'00.1929"	0°00'00.0718"	0.42
			ΔHt.	111.609sft	0.034sft	-0.031sft	-1.51
			Dist.	22719.643sft	0.021sft	-0.040sft	-2.10
B161	417	416	Az.	354°51'31.3716"	0°00'00.3681"	0°00'00.2296"	1.13
			ΔHt.	30.414sft	0.037sft	0.053sft	1.91
			Dist.	15832.660sft	0.029sft	0.033sft	2.08

B31	405	414	Az.	139°14'10.1790"	0°00'00.2805"	0°00'00.0882"	0.50
			ΔHt.	-6.332sft	0.028sft	-0.034sft	-2.08
			Dist.	19086.508sft	0.026sft	0.007sft	0.46
B139	407	93-37	Az.	179°46'07.7783"	0°00'00.3733"	-0°00'00.0346"	-0.22
			ΔHt.	-46.666sft	0.039sft	-0.017sft	-0.94
			Dist.	18526.488sft	0.034sft	0.029sft	2.02
B57	410	401	Az.	316°27'15.5354"	0°00'00.3078"	0°00'00.0979"	0.70
			ΔHt.	25.989sft	0.035sft	-0.032sft	-2.01
			Dist.	21320.372sft	0.032sft	-0.023sft	-1.61
B107	454	465	Az.	127°08'28.1681"	0°00'00.2833"	0°00'00.3123"	2.01
			ΔHt.	16.438sft	0.031sft	-0.005sft	-0.33
			Dist.	20641.544sft	0.028sft	0.002sft	0.12
B240	452	451	Az.	358°30'49.8528"	0°00'00.3228"	-0°00'00.0793"	-0.36
			ΔHt.	19.007sft	0.029sft	-0.038sft	-1.99
			Dist.	15646.185sft	0.025sft	-0.002sft	-0.13
B200	96-139	461	Az.	279°46'52.4794"	0°00'00.2559"	0°00'00.1354"	0.49
			ΔHt.	-5.087sft	0.025sft	0.060sft	1.97
			Dist.	15818.646sft	0.019sft	0.007sft	0.36
B72	416	99-217	Az.	4°09'46.7485"	0°00'00.3177"	0°00'00.4024"	1.83
			ΔHt.	20.102sft	0.029sft	-0.013sft	-0.88
			Dist.	15810.594sft	0.025sft	0.033sft	1.96
B60	401	408	Az.	43°17'14.3672"	0°00'00.2539"	-0°00'00.2929"	-1.83
			ΔHt.	-52.349sft	0.029sft	-0.034sft	-1.95
			Dist.	21134.429sft	0.026sft	0.013sft	0.75
B329	96-139	96-143	Az.	178°37'11.9451"	0°00'00.0422"	-0°00'00.4214"	-0.95
			ΔHt.	-57.855sft	0.033sft	0.026sft	1.95
			Dist.	9693.168sft	0.002sft	0.020sft	0.95
B69	425	427	Az.	179°42'33.2520"	0°00'00.1815"	0°00'00.0254"	0.23
			ΔHt.	-58.609sft	0.030sft	-0.036sft	-1.94
			Dist.	30480.044sft	0.027sft	0.024sft	1.48
B169	431	432	Az.	187°33'33.9914"	0°00'00.3597"	0°00'00.0696"	0.33

			ΔHt.	59.542sft	0.035sft	0.015sft	0.81
			Dist.	16046.422sft	0.029sft	0.033sft	1.93
B254	436	446	Az.	136°02'00.4540"	0°00'00.1975"	0°00'00.0178"	0.10
			ΔHt.	-0.262sft	0.024sft	-0.037sft	-1.92
			Dist.	22364.798sft	0.021sft	-0.001sft	-0.04
B203	463	96-139	Az.	40°18'22.4981"	0°00'00.1606"	-0°00'00.1789"	-1.01
			ΔHt.	16.713sft	0.025sft	0.037sft	1.90
			Dist.	22713.702sft	0.018sft	0.006sft	0.33
B319	456	96-101	Az.	89°26'52.3076"	0°00'00.3065"	0°00'00.3617"	1.76
			ΔHt.	-96.012sft	0.039sft	-0.035sft	-1.83
			Dist.	17081.878sft	0.025sft	-0.014sft	-0.79
B291	402	401	Az.	3°10'41.6117"	0°00'00.3527"	-0°00'00.0674"	-0.32
			ΔHt.	24.965sft	0.032sft	-0.004sft	-0.21
			Dist.	15857.277sft	0.027sft	0.029sft	1.81
B135	96-108	457	Az.	282°16'49.0658"	0°00'00.2897"	0°00'00.4376"	1.80
			ΔHt.	49.633sft	0.029sft	0.012sft	0.80
			Dist.	15149.308sft	0.021sft	0.027sft	1.48
B330	96-143	96-150H	Az.	178°57'24.0405"	0°00'00.0422"	-0°00'00.3943"	-1.18
			ΔHt.	-51.705sft	0.033sft	0.024sft	1.79
			Dist.	12922.201sft	0.003sft	-0.033sft	-1.60
B288	433	441	Az.	91°25'54.8436"	0°00'00.3907"	0°00'00.0390"	0.22
			ΔHt.	-53.763sft	0.033sft	0.026sft	1.79
			Dist.	16145.979sft	0.030sft	-0.021sft	-1.46
B138	438	99-219	Az.	85°57'58.3328"	0°00'00.2683"	-0°00'00.0822"	-0.41
			ΔHt.	-8.722sft	0.030sft	0.031sft	1.78
			Dist.	17981.639sft	0.023sft	-0.004sft	-0.23
B145	413	405	Az.	269°44'25.1577"	0°00'00.3403"	0°00'00.0595"	0.22
			ΔHt.	40.130sft	0.024sft	-0.032sft	-1.78
			Dist.	13654.388sft	0.022sft	-0.006sft	-0.32
B266	449	459	Az.	135°12'11.0820"	0°00'00.2734"	0°00'00.2910"	1.74
			ΔHt.	-23.572sft	0.029sft	0.015sft	0.87

			Dist.	20229.775sft	0.027sft	-0.005sft	-0.33
B322	96-108	96-111	Az.	180°22'18.5406"	0°00'00.0422"	0°00'00.7559"	1.73
			ΔHt.	38.834sft	0.035sft	-0.010sft	-0.79
			Dist.	9935.837sft	0.002sft	0.004sft	0.19
B296	402	403	Az.	179°36'56.5066"	0°00'00.4135"	-0°00'00.0252"	-0.15
			ΔHt.	-63.910sft	0.034sft	-0.021sft	-1.71
			Dist.	15993.011sft	0.032sft	-0.004sft	-0.28
B317	404	405	Az.	178°24'30.1489"	0°00'00.3441"	0°00'00.0948"	0.43
			ΔHt.	45.014sft	0.028sft	-0.003sft	-0.16
			Dist.	15550.314sft	0.026sft	0.029sft	1.70
B141	407	415	Az.	100°19'26.3142"	0°00'00.4152"	-0°00'00.1082"	-0.50
			ΔHt.	-11.669sft	0.032sft	-0.028sft	-1.69
			Dist.	14334.600sft	0.029sft	0.002sft	0.12
B85	428	420	Az.	293°00'37.7099"	0°00'00.3776"	-0°00'00.1426"	-0.70
			ΔHt.	50.229sft	0.031sft	0.027sft	1.69
			Dist.	15748.991sft	0.028sft	0.001sft	0.08
B74	99-218	431	Az.	173°55'26.1475"	0°00'00.3082"	0°00'00.1637"	0.67
			ΔHt.	-46.639sft	0.036sft	-0.010sft	-0.47
			Dist.	15732.037sft	0.024sft	0.033sft	1.68
B250	445	436	Az.	277°29'04.9216"	0°00'00.2985"	-0°00'00.1183"	-0.62
			ΔHt.	73.923sft	0.028sft	0.029sft	1.66
			Dist.	18336.011sft	0.026sft	0.009sft	0.56
B12	96-117	459	Az.	256°10'46.8748"	0°00'00.2872"	0°00'00.2482"	1.10
			ΔHt.	14.873sft	0.031sft	0.000sft	0.00
			Dist.	16638.377sft	0.023sft	-0.030sft	-1.66
B86	435	429	Az.	223°19'11.9960"	0°00'00.2477"	0°00'00.0587"	0.37
			ΔHt.	67.048sft	0.029sft	-0.030sft	-1.66
			Dist.	21899.950sft	0.026sft	-0.014sft	-0.83
B47	419	420	Az.	179°08'10.3338"	0°00'00.5446"	0°00'00.3776"	1.65
			ΔHt.	0.206sft	0.035sft	0.004sft	0.29
			Dist.	12082.894sft	0.032sft	0.005sft	0.38

B108	465	96-150H	Az.	41°24'45.4103"	0°00'00.2026"	-0°00'00.0713"	-0.49
			ΔHt.	-126.617sft	0.032sft	0.027sft	1.54
			Dist.	24728.846sft	0.024sft	-0.028sft	-1.64
B265	451	441	Az.	315°57'04.5479"	0°00'00.2659"	0°00'00.0908"	0.65
			ΔHt.	-14.831sft	0.032sft	-0.028sft	-1.62
			Dist.	22243.660sft	0.029sft	-0.019sft	-1.24
B189	464	454	Az.	270°06'20.3405"	0°00'00.3616"	-0°00'00.3535"	-1.41
			ΔHt.	3.570sft	0.034sft	0.042sft	1.60
			Dist.	16754.801sft	0.028sft	0.003sft	0.16
B158	411	417	Az.	47°32'03.6264"	0°00'00.2499"	-0°00'00.1099"	-0.65
			ΔHt.	36.660sft	0.030sft	0.026sft	1.31
			Dist.	21691.344sft	0.026sft	0.028sft	1.60
B273	449	432	Az.	269°48'47.7783"	0°00'00.1725"	0°00'00.0954"	0.97
			ΔHt.	9.363sft	0.033sft	0.024sft	1.25
			Dist.	34600.160sft	0.028sft	-0.026sft	-1.59
B207	442	451	Az.	90°05'18.5774"	0°00'00.3771"	0°00'00.3211"	1.31
			ΔHt.	45.969sft	0.031sft	0.006sft	0.29
			Dist.	14095.176sft	0.025sft	0.026sft	1.59
B294	412	413	Az.	181°41'30.8082"	0°00'00.3044"	-0°00'00.1829"	-0.78
			ΔHt.	-49.779sft	0.025sft	-0.030sft	-1.56
			Dist.	15685.203sft	0.023sft	0.002sft	0.14
B170	423	431	Az.	129°16'46.8967"	0°00'00.2686"	0°00'00.1625"	0.78
			ΔHt.	-107.350sft	0.038sft	0.055sft	1.55
			Dist.	22689.669sft	0.028sft	-0.007sft	-0.33
B124	444	452	Az.	82°55'46.1880"	0°00'00.2389"	0°00'00.2557"	1.54
			ΔHt.	74.152sft	0.028sft	0.003sft	0.17
			Dist.	21467.665sft	0.025sft	-0.009sft	-0.55
B301	401	409	Az.	81°47'32.5154"	0°00'00.3700"	0°00'00.0213"	0.09
			ΔHt.	20.004sft	0.030sft	0.009sft	0.48
			Dist.	14681.397sft	0.026sft	0.025sft	1.53
B304	404	413	Az.	137°41'19.6215"	0°00'00.2149"	-0°00'00.1494"	-0.81

			ΔHt.	4.885sft	0.023sft	0.004sft	0.19
			Dist.	20925.464sft	0.022sft	-0.028sft	-1.50
B267	439	448	Az.	107°20'40.2577"	0°00'00.3289"	0°00'00.3028"	1.50
			ΔHt.	-60.581sft	0.029sft	0.014sft	0.82
			Dist.	16860.756sft	0.026sft	0.003sft	0.20
B110	465	96-161	Az.	99°44'34.8565"	0°00'00.3188"	0°00'00.3137"	1.47
			ΔHt.	-17.631sft	0.036sft	-0.017sft	-1.49
			Dist.	16178.105sft	0.025sft	-0.004sft	-0.26
B56	411	410	Az.	359°53'08.3708"	0°00'00.4034"	0°00'00.1672"	0.81
			ΔHt.	27.107sft	0.032sft	-0.023sft	-1.47
			Dist.	14914.125sft	0.030sft	0.002sft	0.12
B284	Z85Reset	438	Az.	260°58'02.1360"	0°00'00.3664"	-0°00'00.0194"	-0.09
			ΔHt.	67.569sft	0.030sft	0.027sft	1.46
			Dist.	15777.936sft	0.028sft	0.014sft	0.86
B134	460	461	Az.	182°49'42.2014"	0°00'00.2846"	-0°00'00.1191"	-0.55
			ΔHt.	-51.397sft	0.030sft	-0.024sft	-1.46
			Dist.	16872.204sft	0.024sft	0.010sft	0.55
B34	414	406	Az.	261°41'35.2051"	0°00'00.4762"	-0°00'00.1149"	-0.42
			ΔHt.	-6.346sft	0.030sft	-0.024sft	-1.44
			Dist.	11931.615sft	0.027sft	-0.001sft	-0.04
B220	423	416	Az.	229°17'46.4087"	0°00'00.2530"	-0°00'00.2125"	-1.44
			ΔHt.	-3.981sft	0.032sft	0.000sft	-0.02
			Dist.	22379.666sft	0.028sft	0.006sft	0.35
B183	93-50	93-60	Az.	89°31'56.9273"	0°00'00.3556"	-0°00'00.1405"	-0.47
			ΔHt.	-8.241sft	0.044sft	0.008sft	0.18
			Dist.	21362.223sft	0.034sft	-0.034sft	-1.43
B205	435	452	Az.	89°44'23.9354"	0°00'00.1613"	0°00'00.1463"	1.11
			ΔHt.	77.525sft	0.028sft	0.010sft	0.39
			Dist.	32069.617sft	0.024sft	-0.027sft	-1.42
B210	407	93-47	Az.	131°38'35.3364"	0°00'00.2214"	0°00'00.0769"	0.71
			ΔHt.	-22.699sft	0.032sft	-0.021sft	-1.39

			Dist.	27781.402sft	0.030sft	-0.001sft	-0.10
B328	96-132	96-139	Az.	179°00'55.1424"	0°00'00.0422"	0°00'00.0772"	0.22
			ΔHt.	1.604sft	0.034sft	0.017sft	1.38
			Dist.	12259.586sft	0.002sft	0.000sft	0.02
B198	464	TBM-P-6	Az.	126°09'28.6286"	0°00'01.6220"	-0°00'00.6838"	-0.65
			ΔHt.	-79.863sft	0.028sft	-0.024sft	-1.37
			Dist.	3222.946sft	0.025sft	-0.006sft	-0.38
B293	412	413	Az.	181°41'30.8082"	0°00'00.3044"	0°00'00.1113"	0.47
			ΔHt.	-49.779sft	0.025sft	-0.014sft	-0.70
			Dist.	15685.203sft	0.023sft	0.025sft	1.35
B260	450	459	Az.	84°24'50.1523"	0°00'00.3481"	0°00'00.2690"	1.35
			ΔHt.	-7.944sft	0.029sft	-0.010sft	-0.64
			Dist.	16216.303sft	0.027sft	-0.005sft	-0.31
B95	93-57	93-50	Az.	269°40'00.9480"	0°00'00.6357"	-0°00'00.0735"	-0.27
			ΔHt.	24.915sft	0.036sft	0.014sft	0.95
			Dist.	10810.707sft	0.032sft	0.019sft	1.35
B327	96-128	96-132	Az.	178°46'22.2591"	0°00'00.0422"	-0°00'00.8013"	-1.34
			ΔHt.	-32.730sft	0.034sft	0.015sft	1.19
			Dist.	7217.326sft	0.001sft	0.027sft	1.28
B185	446	447	Az.	175°32'53.7940"	0°00'00.3940"	-0°00'00.4387"	-1.33
			ΔHt.	25.534sft	0.046sft	-0.025sft	-0.29
			Dist.	17455.720sft	0.033sft	-0.019sft	-0.72
B255	452	453	Az.	180°01'45.5640"	0°00'00.3340"	0°00'00.1614"	0.69
			ΔHt.	-33.834sft	0.027sft	0.009sft	0.57
			Dist.	14906.649sft	0.024sft	0.022sft	1.31
B268	448	449	Az.	172°34'12.4685"	0°00'00.3309"	0°00'00.0680"	0.33
			ΔHt.	45.503sft	0.029sft	0.020sft	1.29
			Dist.	16157.064sft	0.026sft	0.007sft	0.46
B277	Z85Reset	448	Az.	174°13'58.9153"	0°00'00.3295"	0°00'00.0222"	0.11
			ΔHt.	12.105sft	0.031sft	-0.023sft	-1.29
			Dist.	16696.434sft	0.027sft	0.019sft	1.08

B76	423	99-218	Az.	85°24'09.3139"	0°00'00.2862"	-0°00'00.2957"	-1.29
			ΔHt.	-60.711sft	0.034sft	-0.002sft	-0.18
			Dist.	15938.844sft	0.022sft	-0.018sft	-0.99
B117	453	464	Az.	136°01'36.2897"	0°00'00.2099"	0°00'00.1813"	1.28
			ΔHt.	12.450sft	0.027sft	-0.003sft	-0.16
			Dist.	24420.148sft	0.025sft	0.004sft	0.25
B37	93-50	U-86	Az.	313°50'39.9783"	0°00'01.2760"	-0°00'00.0788"	-0.15
			ΔHt.	6.380sft	0.032sft	-0.019sft	-1.27
			Dist.	5252.275sft	0.032sft	-0.004sft	-0.27
B272	439	431	Az.	249°42'52.8593"	0°00'00.3794"	-0°00'00.1555"	-0.71
			ΔHt.	-65.258sft	0.032sft	0.021sft	1.27
			Dist.	15229.627sft	0.028sft	0.008sft	0.51
B88	436	429	Az.	259°21'52.6442"	0°00'00.3956"	-0°00'00.0745"	-0.34
			ΔHt.	-18.002sft	0.031sft	0.021sft	1.27
			Dist.	14945.194sft	0.028sft	0.003sft	0.21
B222	432	425	Az.	269°47'18.9887"	0°00'00.3545"	-0°00'00.1373"	-0.63
			ΔHt.	4.340sft	0.029sft	-0.019sft	-1.26
			Dist.	15353.135sft	0.026sft	-0.015sft	-0.93
B27	93-40	93-37	Az.	272°01'52.5589"	0°00'00.7132"	-0°00'00.0267"	-0.11
			ΔHt.	-11.897sft	0.037sft	-0.018sft	-1.26
			Dist.	10189.041sft	0.035sft	0.000sft	-0.01
B98	430	437	Az.	81°47'50.2034"	0°00'00.3987"	-0°00'00.0042"	-0.02
			ΔHt.	-13.200sft	0.035sft	-0.018sft	-1.26
			Dist.	16352.029sft	0.032sft	0.002sft	0.12
B132	96-117	460	Az.	214°38'23.4043"	0°00'00.1568"	-0°00'00.1226"	-0.81
			ΔHt.	0.787sft	0.030sft	-0.018sft	-1.07
			Dist.	25754.851sft	0.020sft	-0.024sft	-1.26
B81	434	427	Az.	271°25'04.7504"	0°00'00.3266"	0°00'00.2738"	1.25
			ΔHt.	86.710sft	0.027sft	0.018sft	1.05
			Dist.	15804.487sft	0.025sft	-0.011sft	-0.66
B102	J-6	447	Az.	50°31'29.7770"	0°00'00.9100"	0°00'00.1692"	0.37

			ΔHt.	-12.264sft	0.042sft	-0.012sft	-0.52
			Dist.	6915.028sft	0.030sft	-0.018sft	-1.25
B326	460	96-128	Az.	90°13'25.5967"	0°00'00.2817"	0°00'00.0033"	0.01
			ΔHt.	-15.184sft	0.032sft	0.018sft	1.24
			Dist.	14380.837sft	0.019sft	-0.021sft	-1.11
B178	421	422	Az.	185°15'47.4174"	0°00'00.4438"	0°00'00.0558"	0.27
			ΔHt.	12.371sft	0.049sft	-0.043sft	-1.23
			Dist.	16620.161sft	0.037sft	-0.009sft	-0.50
B242	96-108	458	Az.	237°41'37.3438"	0°00'00.2889"	0°00'00.2143"	1.20
			ΔHt.	43.077sft	0.032sft	-0.001sft	-0.06
			Dist.	18959.727sft	0.027sft	-0.004sft	-0.26
B214	422	93-47	Az.	214°02'36.3926"	0°00'00.3035"	0°00'00.0113"	0.06
			ΔHt.	28.434sft	0.030sft	0.011sft	0.57
			Dist.	18755.011sft	0.028sft	-0.020sft	-1.19
B249	436	437	Az.	176°06'51.0061"	0°00'00.3314"	0°00'00.0765"	0.37
			ΔHt.	19.520sft	0.029sft	0.019sft	1.19
			Dist.	16251.284sft	0.026sft	0.000sft	-0.03
B20	438	99-218	Az.	274°54'04.5818"	0°00'00.3296"	0°00'00.0162"	0.07
			ΔHt.	-13.501sft	0.034sft	-0.012sft	-0.92
			Dist.	14819.515sft	0.024sft	0.020sft	1.14
B73	423	99-217	Az.	274°14'41.1214"	0°00'00.2893"	0°00'00.1137"	0.49
			ΔHt.	16.120sft	0.029sft	-0.012sft	-0.78
			Dist.	15850.269sft	0.022sft	-0.020sft	-1.13
B211	406	407	Az.	184°07'23.5373"	0°00'00.4621"	0°00'00.0827"	0.36
			ΔHt.	52.769sft	0.032sft	-0.015sft	-0.97
			Dist.	13205.745sft	0.030sft	0.017sft	1.13
B318	96-154	96-161	Az.	181°15'05.2602"	0°00'00.0422"	-0°00'00.1482"	-0.37
			ΔHt.	5.057sft	0.035sft	0.014sft	1.13
			Dist.	10693.751sft	0.002sft	-0.001sft	-0.05
B297	402	409	Az.	40°40'43.4583"	0°00'00.2437"	-0°00'00.1515"	-1.10
			ΔHt.	44.969sft	0.033sft	-0.007sft	-0.35

			Dist.	23641.762sft	0.028sft	0.018sft	1.12
B100	437	93-67	Az.	181°40'48.6901"	0°00'00.3186"	-0°00'00.1249"	-0.74
			ΔHt.	13.266sft	0.033sft	0.017sft	1.12
			Dist.	18542.774sft	0.029sft	0.002sft	0.11
B233	96-150H	TBM-P-6	Az.	239°16'36.2199"	0°00'00.3060"	-0°00'00.0516"	-0.23
			ΔHt.	26.748sft	0.028sft	0.019sft	1.11
			Dist.	15648.202sft	0.023sft	0.001sft	0.03
B176	435	436	Az.	181°27'46.2912"	0°00'00.4043"	0°00'00.1776"	0.67
			ΔHt.	85.050sft	0.029sft	0.020sft	1.11
			Dist.	13179.190sft	0.026sft	-0.002sft	-0.14
B109	455	465	Az.	86°20'20.7612"	0°00'00.3482"	0°00'00.1655"	0.82
			ΔHt.	-15.495sft	0.031sft	0.012sft	0.76
			Dist.	16451.803sft	0.027sft	-0.018sft	-1.11
B175	434	435	Az.	179°41'21.6889"	0°00'00.2880"	-0°00'00.0021"	-0.01
			ΔHt.	-11.443sft	0.027sft	-0.029sft	-1.11
			Dist.	16386.709sft	0.023sft	-0.016sft	-0.76
B262	448	431	Az.	269°33'38.3788"	0°00'00.1786"	0°00'00.1118"	0.97
			ΔHt.	-4.677sft	0.030sft	-0.020sft	-1.10
			Dist.	30380.198sft	0.026sft	-0.014sft	-0.82
B48	419	412	Az.	268°45'16.7612"	0°00'00.3627"	-0°00'00.0798"	-0.52
			ΔHt.	27.527sft	0.034sft	-0.014sft	-1.09
			Dist.	18065.455sft	0.032sft	-0.011sft	-0.84
B270	438	TBM-C86	Az.	145°06'20.7843"	0°00'00.4255"	-0°00'00.0295"	-0.13
			ΔHt.	-103.136sft	0.032sft	0.008sft	0.47
			Dist.	14170.160sft	0.029sft	0.017sft	1.09
B324	96-121	96-117	Az.	0°43'48.6303"	0°00'00.0422"	0°00'00.4344"	1.08
			ΔHt.	-0.111sft	0.035sft	0.001sft	0.04
			Dist.	10737.488sft	0.002sft	0.004sft	0.21
B93	93-57	430	Az.	18°37'33.8379"	0°00'00.3644"	0°00'00.1856"	1.07
			ΔHt.	16.261sft	0.034sft	-0.006sft	-0.45
			Dist.	17161.726sft	0.031sft	0.013sft	0.94

B202	96-139	461	Az.	279°46'52.4794"	0°00'00.2559"	-0°00'00.0161"	-0.07
			ΔHt.	-5.087sft	0.025sft	0.010sft	0.56
			Dist.	15818.646sft	0.019sft	0.020sft	1.07
B129	434	444	Az.	150°07'13.9993"	0°00'00.2244"	0°00'00.1764"	1.05
			ΔHt.	-8.070sft	0.027sft	-0.006sft	-0.31
			Dist.	21789.302sft	0.024sft	0.005sft	0.31
B115	453	TBM-P-6	Az.	134°52'31.0765"	0°00'00.1833"	0°00'00.0325"	0.25
			ΔHt.	-67.413sft	0.028sft	0.024sft	1.05
			Dist.	27600.584sft	0.025sft	-0.006sft	-0.32
B8	96-150H	463	Az.	289°14'59.1578"	0°00'00.2335"	-0°00'00.0325"	-0.13
			ΔHt.	92.848sft	0.027sft	0.018sft	1.04
			Dist.	16070.806sft	0.018sft	0.010sft	0.55
B186	446	454	Az.	100°07'15.1307"	0°00'00.3320"	0°00'00.2221"	1.03
			ΔHt.	-25.077sft	0.032sft	-0.020sft	-0.88
			Dist.	17384.677sft	0.027sft	-0.009sft	-0.52
B236	463	464	Az.	184°23'03.5609"	0°00'00.4336"	0°00'00.1509"	0.49
			ΔHt.	13.763sft	0.026sft	0.001sft	0.04
			Dist.	11423.533sft	0.024sft	0.017sft	1.03
B252	426	433	Az.	81°39'53.0260"	0°00'00.3228"	-0°00'00.2161"	-1.03
			ΔHt.	18.803sft	0.027sft	-0.004sft	-0.22
			Dist.	16230.203sft	0.025sft	-0.009sft	-0.57
B67	417	425	Az.	89°52'20.9226"	0°00'00.3481"	-0°00'00.0438"	-0.20
			ΔHt.	-9.074sft	0.029sft	-0.017sft	-1.02
			Dist.	15668.460sft	0.026sft	-0.003sft	-0.16
B136	458	457	Az.	5°11'23.9690"	0°00'00.4359"	-0°00'00.1211"	-0.51
			ΔHt.	6.556sft	0.031sft	0.003sft	0.20
			Dist.	13410.910sft	0.029sft	0.016sft	1.01
B127	444	443	Az.	2°17'44.1761"	0°00'00.7205"	-0°00'00.0909"	-0.22
			ΔHt.	64.209sft	0.031sft	-0.017sft	-0.98
			Dist.	7906.181sft	0.028sft	0.009sft	0.59
B121	96-139	462	Az.	249°58'47.7359"	0°00'00.2512"	-0°00'00.1849"	-0.97

			ΔHt.	-111.987sft	0.028sft	0.000sft	0.02
			Dist.	19353.594sft	0.023sft	0.000sft	0.02
B82	TBM-L-86	427	Az.	284°38'00.2052"	0°00'00.6890"	0°00'00.2838"	0.97
			ΔHt.	-5.760sft	0.037sft	0.014sft	0.84
			Dist.	9560.477sft	0.032sft	-0.004sft	-0.28
B212	93-47	U-86	Az.	61°16'35.6421"	0°00'00.8666"	-0°00'00.1063"	-0.30
			ΔHt.	5.125sft	0.032sft	-0.014sft	-0.95
			Dist.	7684.738sft	0.032sft	0.001sft	0.10
B216	411	412	Az.	182°19'25.5930"	0°00'00.3232"	0°00'00.0726"	0.37
			ΔHt.	-9.241sft	0.029sft	-0.016sft	-0.91
			Dist.	17123.579sft	0.027sft	0.016sft	0.95
B52	403	404	Az.	178°57'43.6932"	0°00'00.3872"	0°00'00.0048"	0.03
			ΔHt.	-28.125sft	0.032sft	-0.014sft	-0.95
			Dist.	15849.520sft	0.030sft	-0.006sft	-0.42
B280	Z85Reset	99-219	Az.	117°27'23.5680"	0°00'01.9555"	-0°00'01.2451"	-0.94
			ΔHt.	58.846sft	0.028sft	-0.006sft	-0.33
			Dist.	2654.671sft	0.025sft	0.004sft	0.23
B111	430	422	Az.	267°04'34.5604"	0°00'00.4279"	0°00'00.0318"	0.12
			ΔHt.	-18.526sft	0.041sft	0.029sft	0.94
			Dist.	16335.621sft	0.033sft	-0.019sft	-0.91
B118	453	446	Az.	229°24'45.7796"	0°00'00.2263"	-0°00'00.0519"	-0.32
			ΔHt.	41.096sft	0.027sft	-0.018sft	-0.92
			Dist.	22268.871sft	0.024sft	-0.007sft	-0.41
B184	93-60	93-67	Az.	90°13'41.8891"	0°00'00.6451"	-0°00'00.2119"	-0.85
			ΔHt.	-0.346sft	0.036sft	-0.002sft	-0.18
			Dist.	10587.586sft	0.033sft	-0.012sft	-0.90
B130	442	460	Az.	89°48'22.5749"	0°00'00.1589"	-0°00'00.0983"	-0.82
			ΔHt.	54.838sft	0.032sft	0.016sft	0.54
			Dist.	32221.320sft	0.024sft	-0.016sft	-0.87
B137	96-108	96-102H	Az.	37°04'28.6878"	0°00'00.0422"	-0°00'00.0315"	-0.19
			ΔHt.	-26.812sft	0.047sft	0.008sft	0.46

			Dist.	26971.267sft	0.005sft	-0.019sft	-0.87
B157	411	404	Az.	221°21'33.3357"	0°00'00.2331"	0°00'00.0176"	0.12
			ΔHt.	-63.905sft	0.028sft	0.016sft	0.86
			Dist.	23054.772sft	0.026sft	0.013sft	0.80
B248	426	417	Az.	318°02'51.6095"	0°00'00.2199"	0°00'00.0224"	0.15
			ΔHt.	49.176sft	0.027sft	-0.015sft	-0.84
			Dist.	23421.237sft	0.025sft	-0.010sft	-0.62
B54	410	417	Az.	90°57'43.3593"	0°00'00.3775"	-0°00'00.1642"	-0.83
			ΔHt.	9.553sft	0.031sft	0.005sft	0.34
			Dist.	16033.339sft	0.029sft	-0.011sft	-0.70
B44	418	419	Az.	179°10'30.6449"	0°00'00.5262"	0°00'00.2226"	0.83
			ΔHt.	-41.360sft	0.038sft	-0.017sft	-0.75
			Dist.	12746.395sft	0.033sft	0.014sft	0.80
B311	400	401	Az.	176°34'30.5781"	0°00'00.3799"	0°00'00.0936"	0.46
			ΔHt.	-3.878sft	0.034sft	0.014sft	0.66
			Dist.	15641.508sft	0.029sft	-0.013sft	-0.82
B131	460	451	Az.	269°39'51.5138"	0°00'00.2818"	0°00'00.1616"	0.82
			ΔHt.	-8.869sft	0.029sft	0.000sft	0.01
			Dist.	18126.449sft	0.024sft	-0.008sft	-0.46
B251	452	445	Az.	222°15'43.2703"	0°00'00.2595"	-0°00'00.0213"	-0.13
			ΔHt.	-66.398sft	0.029sft	0.012sft	0.69
			Dist.	21181.836sft	0.026sft	0.013sft	0.78
B274	449	450	Az.	186°44'58.3321"	0°00'00.3615"	0°00'00.0950"	0.48
			ΔHt.	-15.628sft	0.030sft	-0.010sft	-0.67
			Dist.	16043.647sft	0.028sft	0.012sft	0.78
B323	96-117	96-111	Az.	359°40'19.5792"	0°00'00.0422"	-0°00'00.2789"	-0.68
			ΔHt.	19.964sft	0.035sft	0.010sft	0.77
			Dist.	10599.380sft	0.002sft	-0.008sft	-0.40
B321	96-103	96-108	Az.	180°32'37.9464"	0°00'00.0422"	-0°00'00.3008"	-0.77
			ΔHt.	-12.474sft	0.034sft	0.001sft	0.07
			Dist.	11112.139sft	0.002sft	0.010sft	0.45

B256	433	434	Az.	180°22'36.8749"	0°00'00.3330"	-0°00'00.1348"	-0.63
			ΔHt.	-124.020sft	0.027sft	0.012sft	0.75
			Dist.	15770.297sft	0.026sft	-0.009sft	-0.53
B253	426	418	Az.	265°19'26.5902"	0°00'00.4017"	-0°00'00.0663"	-0.30
			ΔHt.	17.108sft	0.031sft	-0.012sft	-0.75
			Dist.	14558.022sft	0.028sft	0.002sft	0.16
B133	460	452	Az.	228°23'32.4616"	0°00'00.1929"	-0°00'00.0259"	-0.16
			ΔHt.	-27.876sft	0.028sft	-0.010sft	-0.41
			Dist.	23715.067sft	0.022sft	-0.014sft	-0.75
B247	426	427	Az.	179°16'17.5779"	0°00'00.4009"	0°00'00.1961"	0.75
			ΔHt.	-18.508sft	0.027sft	0.005sft	0.31
			Dist.	13037.755sft	0.025sft	0.007sft	0.44
B105	455	J-6	Az.	256°08'50.8670"	0°00'00.2811"	-0°00'00.1054"	-0.74
			ΔHt.	30.942sft	0.033sft	-0.008sft	-0.52
			Dist.	21780.785sft	0.029sft	0.005sft	0.35
B97	446	437	Az.	269°34'21.4636"	0°00'00.3389"	-0°00'00.0672"	-0.20
			ΔHt.	19.782sft	0.028sft	0.013sft	0.21
			Dist.	14425.643sft	0.024sft	-0.018sft	-0.74
B128	444	435	Az.	283°07'54.8930"	0°00'00.4817"	0°00'00.0157"	0.05
			ΔHt.	-3.373sft	0.029sft	-0.005sft	-0.24
			Dist.	11054.003sft	0.025sft	0.013sft	0.74
B223	434	TBM-L-86	Az.	252°48'23.2787"	0°00'00.9649"	0°00'00.2865"	0.70
			ΔHt.	92.470sft	0.036sft	0.004sft	0.29
			Dist.	6856.355sft	0.032sft	-0.010sft	-0.71
B243	446	437	Az.	269°34'21.4636"	0°00'00.3389"	0°00'00.0103"	0.04
			ΔHt.	19.782sft	0.028sft	0.012sft	0.69
			Dist.	14425.643sft	0.024sft	-0.005sft	-0.26
B231	454	455	Az.	179°50'47.6990"	0°00'00.3997"	-0°00'00.0664"	-0.27
			ΔHt.	31.934sft	0.029sft	0.011sft	0.68
			Dist.	13513.512sft	0.027sft	0.005sft	0.34
B206	442	443	Az.	211°54'41.4000"	0°00'00.4638"	-0°00'00.0041"	-0.02

			ΔHt.	17.019sft	0.032sft	0.012sft	0.68
			Dist.	12250.588sft	0.028sft	0.004sft	0.24
B182	430	93-60	Az.	162°35'46.5908"	0°00'00.3657"	-0°00'00.1355"	-0.67
			ΔHt.	0.412sft	0.037sft	0.001sft	0.05
			Dist.	16937.565sft	0.030sft	-0.008sft	-0.47
B123	463	462	Az.	341°55'28.8962"	0°00'00.4545"	-0°00'00.0545"	-0.18
			ΔHt.	-95.274sft	0.028sft	-0.002sft	-0.12
			Dist.	11239.198sft	0.025sft	0.011sft	0.66
B226	420	421	Az.	179°50'17.0543"	0°00'00.3093"	-0°00'00.0416"	-0.26
			ΔHt.	-5.741sft	0.035sft	-0.012sft	-0.66
			Dist.	19796.376sft	0.030sft	-0.007sft	-0.47
B209	442	452	Az.	137°11'11.2059"	0°00'00.2207"	-0°00'00.0232"	-0.13
			ΔHt.	26.962sft	0.029sft	-0.018sft	-0.66
			Dist.	21351.013sft	0.023sft	-0.006sft	-0.33
B224	434	420	Az.	247°20'47.4972"	0°00'00.1570"	-0°00'00.0734"	-0.65
			ΔHt.	81.171sft	0.027sft	0.012sft	0.64
			Dist.	32652.130sft	0.025sft	0.000sft	0.01
B188	455	446	Az.	314°02'09.9794"	0°00'00.2183"	-0°00'00.0771"	-0.47
			ΔHt.	-6.856sft	0.029sft	0.015sft	0.65
			Dist.	23853.226sft	0.025sft	-0.009sft	-0.47
B9	TBM-P-6	463	Az.	352°35'36.2982"	0°00'00.3212"	-0°00'00.1786"	-0.64
			ΔHt.	66.100sft	0.023sft	0.002sft	0.10
			Dist.	13403.741sft	0.021sft	0.007sft	0.41
B244	445	446	Az.	190°59'39.4516"	0°00'00.3682"	-0°00'00.1590"	-0.64
			ΔHt.	73.661sft	0.027sft	-0.006sft	-0.35
			Dist.	13976.821sft	0.025sft	0.000sft	-0.01
B275	450	441	Az.	270°50'30.3635"	0°00'00.3814"	0°00'00.1232"	0.64
			ΔHt.	-45.731sft	0.032sft	-0.001sft	-0.08
			Dist.	15912.935sft	0.029sft	0.000sft	0.00
B90	420	429	Az.	142°20'27.7245"	0°00'00.2159"	0°00'00.0865"	0.64
			ΔHt.	-25.566sft	0.028sft	0.005sft	0.29

			Dist.	24914.763sft	0.026sft	0.001sft	0.06
B101	446	J-6	Az.	190°21'22.6050"	0°00'00.2487"	0°00'00.1020"	0.64
			ΔHt.	37.799sft	0.032sft	-0.006sft	-0.31
			Dist.	22159.346sft	0.027sft	0.008sft	0.46
B144	405	406	Az.	177°40'34.0468"	0°00'00.3755"	0°00'00.1085"	0.58
			ΔHt.	-12.678sft	0.033sft	0.010sft	0.58
			Dist.	16199.565sft	0.030sft	0.009sft	0.62
B17	96-102H	96-101	Az.	269°41'34.1032"	0°00'00.0422"	0°00'00.1210"	0.47
			ΔHt.	-35.164sft	0.049sft	0.015sft	0.62
			Dist.	17451.804sft	0.004sft	0.007sft	0.32
B113	415	422	Az.	91°09'38.7083"	0°00'00.3840"	-0°00'00.0995"	-0.61
			ΔHt.	-39.464sft	0.034sft	0.004sft	0.27
			Dist.	17140.941sft	0.032sft	-0.001sft	-0.08
B199	463	TBM-P-6	Az.	172°35'21.3960"	0°00'00.3214"	0°00'00.1263"	0.45
			ΔHt.	-66.100sft	0.023sft	-0.012sft	-0.61
			Dist.	13403.741sft	0.021sft	0.003sft	0.14
B125	442	444	Az.	200°22'15.2170"	0°00'00.2529"	0°00'00.0771"	0.43
			ΔHt.	-47.190sft	0.027sft	-0.011sft	-0.61
			Dist.	19519.626sft	0.024sft	0.003sft	0.17
B245	453	445	Az.	266°54'22.1233"	0°00'00.3792"	-0°00'00.0066"	-0.03
			ΔHt.	-32.564sft	0.027sft	0.010sft	0.60
			Dist.	14258.404sft	0.026sft	-0.007sft	-0.44
B120	96-139	462	Az.	249°58'47.7359"	0°00'00.2512"	0°00'00.0515"	0.19
			ΔHt.	-111.987sft	0.028sft	-0.027sft	-0.60
			Dist.	19353.594sft	0.023sft	-0.007sft	-0.31
B299	412	404	Az.	269°13'48.0971"	0°00'00.3461"	0°00'00.0622"	0.26
			ΔHt.	-54.663sft	0.026sft	0.010sft	0.59
			Dist.	14541.100sft	0.024sft	-0.001sft	-0.05
B78	432	426	Az.	221°18'10.7182"	0°00'00.2272"	0°00'00.0438"	0.27
			ΔHt.	-35.761sft	0.030sft	0.014sft	0.59
			Dist.	23294.584sft	0.025sft	-0.008sft	-0.47

B10	460	459	Az.	354°55'41.1459"	0°00'00.2982"	0°00'00.0582"	0.29
			ΔHt.	14.086sft	0.028sft	0.000sft	-0.03
			Dist.	17281.772sft	0.025sft	0.010sft	0.58
B303	404	413	Az.	137°41'19.6215"	0°00'00.2149"	-0°00'00.0310"	-0.17
			ΔHt.	4.885sft	0.023sft	0.012sft	0.58
			Dist.	20925.464sft	0.022sft	0.002sft	0.12
B201	463	96-139	Az.	40°18'22.4981"	0°00'00.1606"	-0°00'00.0263"	-0.11
			ΔHt.	16.713sft	0.025sft	0.025sft	0.56
			Dist.	22713.702sft	0.018sft	-0.004sft	-0.16
B313	405	413	Az.	89°42'27.1170"	0°00'00.3403"	0°00'00.0419"	0.15
			ΔHt.	-40.130sft	0.024sft	-0.011sft	-0.56
			Dist.	13654.388sft	0.022sft	0.009sft	0.51
B53	411	403	Az.	264°37'56.4676"	0°00'00.3831"	0°00'00.0393"	0.19
			ΔHt.	-35.779sft	0.031sft	0.009sft	0.56
			Dist.	15579.163sft	0.029sft	0.002sft	0.13
B38	422	93-50	Az.	179°53'29.0414"	0°00'00.3689"	0°00'00.0225"	0.11
			ΔHt.	27.180sft	0.030sft	-0.008sft	-0.55
			Dist.	15488.747sft	0.028sft	0.002sft	0.12
B104	J-6	93-67	Az.	286°00'18.8056"	0°00'00.5188"	-0°00'00.0408"	-0.14
			ΔHt.	-4.750sft	0.036sft	0.014sft	0.51
			Dist.	11440.543sft	0.028sft	0.003sft	0.19
B29	93-47	93-40	Az.	267°44'42.5777"	0°00'00.6805"	-0°00'00.0343"	-0.15
			ΔHt.	-12.070sft	0.035sft	-0.006sft	-0.51
			Dist.	10511.941sft	0.035sft	0.000sft	0.00
B165	424	423	Az.	359°34'11.6403"	0°00'00.4341"	0°00'00.0249"	0.10
			ΔHt.	111.452sft	0.036sft	0.000sft	0.00
			Dist.	14163.582sft	0.031sft	0.010sft	0.50
B39	93-50	93-47	Az.	269°43'02.8243"	0°00'00.5339"	-0°00'00.1360"	-0.45
			ΔHt.	1.255sft	0.028sft	-0.008sft	-0.50
			Dist.	10528.940sft	0.027sft	0.003sft	0.17
B122	461	462	Az.	195°32'05.6864"	0°00'00.5448"	0°00'00.0707"	0.20

			ΔHt.	-106.900sft	0.028sft	0.008sft	0.50
			Dist.	9667.959sft	0.026sft	0.000sft	-0.02
B239	443	434	Az.	314°34'27.6588"	0°00'00.3645"	0°00'00.0131"	0.06
			ΔHt.	-56.139sft	0.031sft	-0.006sft	-0.33
			Dist.	15670.683sft	0.027sft	0.008sft	0.49
B325	96-128	96-121	Az.	0°39'47.7679"	0°00'00.0422"	0°00'00.0853"	0.21
			ΔHt.	14.509sft	0.035sft	-0.001sft	-0.08
			Dist.	10518.680sft	0.002sft	0.010sft	0.47
B230	447	93-67	Az.	265°39'56.2738"	0°00'00.3871"	-0°00'00.0806"	-0.46
			ΔHt.	7.514sft	0.038sft	-0.005sft	-0.44
			Dist.	16381.916sft	0.031sft	-0.003sft	-0.19
B279	448	440	Az.	224°26'05.2657"	0°00'00.3066"	0°00'00.0064"	0.05
			ΔHt.	51.598sft	0.038sft	-0.001sft	-0.06
			Dist.	22452.725sft	0.033sft	0.006sft	0.43
B119	463	453	Az.	289°10'45.3300"	0°00'00.2488"	0°00'00.0815"	0.43
			ΔHt.	1.313sft	0.025sft	-0.001sft	-0.06
			Dist.	18862.601sft	0.023sft	-0.005sft	-0.26
B285	Z85Reset	439	Az.	231°13'52.5256"	0°00'00.3113"	0°00'00.0561"	0.31
			ΔHt.	72.687sft	0.031sft	-0.007sft	-0.37
			Dist.	18486.216sft	0.028sft	-0.007sft	-0.42
B237	463	461	Az.	357°25'49.9793"	0°00'00.2284"	0°00'00.0768"	0.42
			ΔHt.	11.626sft	0.025sft	-0.007sft	-0.39
			Dist.	20019.332sft	0.022sft	-0.004sft	-0.25
B92	93-57	93-60	Az.	89°26'49.3577"	0°00'00.6717"	0°00'00.1261"	0.30
			ΔHt.	16.673sft	0.040sft	-0.012sft	-0.41
			Dist.	10551.555sft	0.032sft	-0.001sft	-0.06
B320	96-101	96-103	Az.	172°49'13.7651"	0°00'00.0422"	0°00'00.1701"	0.41
			ΔHt.	74.450sft	0.034sft	0.004sft	0.32
			Dist.	10383.207sft	0.002sft	-0.001sft	-0.06
B259	450	451	Az.	181°37'20.0298"	0°00'00.3544"	0°00'00.0818"	0.39
			ΔHt.	-30.900sft	0.030sft	0.001sft	0.05

			Dist.	15760.432sft	0.027sft	-0.001sft	-0.07
B155	411	418	Az.	102°58'49.8492"	0°00'00.3565"	0°00'00.0721"	0.27
			ΔHt.	4.592sft	0.036sft	-0.014sft	-0.39
			Dist.	17624.274sft	0.030sft	-0.008sft	-0.34
B258	417	418	Az.	176°25'55.0866"	0°00'00.2976"	0°00'00.0387"	0.22
			ΔHt.	-32.068sft	0.030sft	0.006sft	0.36
			Dist.	18640.546sft	0.027sft	0.004sft	0.23
B89	429	421	Az.	269°45'48.9007"	0°00'00.4160"	0°00'00.0064"	0.03
			ΔHt.	19.826sft	0.035sft	-0.003sft	-0.18
			Dist.	15166.151sft	0.030sft	0.005sft	0.36
B204	461	452	Az.	273°44'11.2103"	0°00'00.2983"	-0°00'00.0763"	-0.35
			ΔHt.	23.521sft	0.028sft	-0.002sft	-0.11
			Dist.	16935.462sft	0.024sft	0.005sft	0.29
B208	442	434	Az.	271°57'19.9947"	0°00'00.2768"	0°00'00.0747"	0.35
			ΔHt.	-39.120sft	0.028sft	-0.001sft	-0.06
			Dist.	17645.915sft	0.023sft	0.000sft	-0.01
B287	449	440	Az.	269°58'11.7732"	0°00'00.3861"	0°00'00.0436"	0.27
			ΔHt.	6.095sft	0.037sft	0.001sft	0.06
			Dist.	17808.401sft	0.033sft	-0.005sft	-0.34
B15	459	458	Az.	0°30'06.5498"	0°00'00.4138"	0°00'00.0075"	0.03
			ΔHt.	9.334sft	0.034sft	0.004sft	0.29
			Dist.	14377.069sft	0.029sft	-0.002sft	-0.15
B35	413	414	Az.	184°43'23.6285"	0°00'00.3810"	-0°00'00.0605"	-0.27
			ΔHt.	33.798sft	0.028sft	-0.003sft	-0.20
			Dist.	14574.769sft	0.027sft	0.003sft	0.22
B84	434	428	Az.	219°50'48.6294"	0°00'00.2421"	0°00'00.0370"	0.26
			ΔHt.	30.941sft	0.032sft	-0.005sft	-0.24
			Dist.	24411.238sft	0.029sft	0.000sft	0.00
B257	433	427	Az.	225°57'38.7354"	0°00'00.2408"	0°00'00.0008"	0.00
			ΔHt.	-37.310sft	0.027sft	-0.005sft	-0.25
			Dist.	22122.947sft	0.026sft	0.003sft	0.19

Geoid Observations

Number of Observations : 98

Number of Outliers : 0

Observation Adjustment (Critical Tau = 3.95). Any outliers are in **red**.

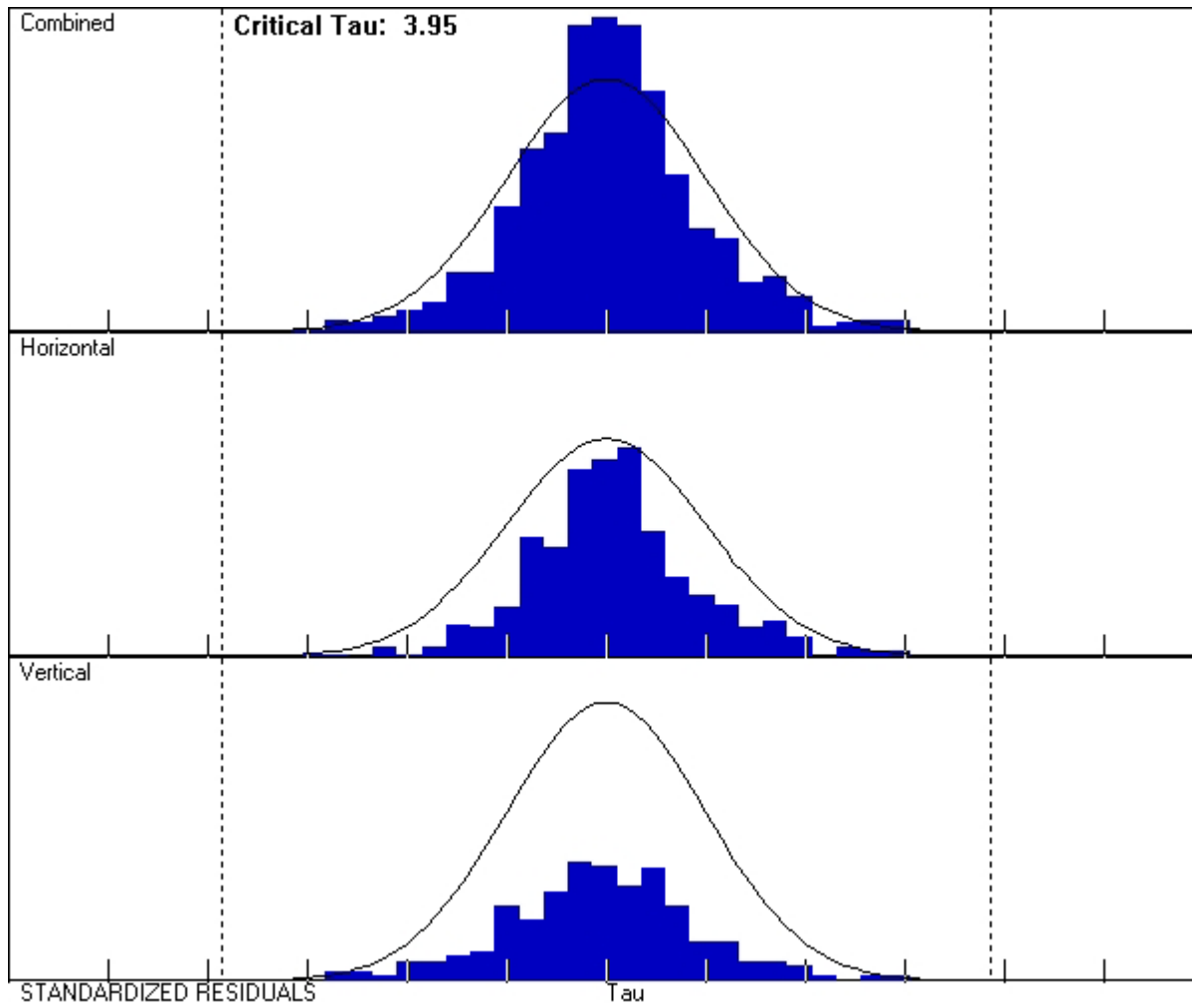
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G354	96-161	-107.339sft	0.476sft	0.158sft	1.82
G315	93-50	-107.034sft	0.410sft	-0.202sft	-1.34
G306	93-40	-106.885sft	0.421sft	-0.188sft	-1.32
G353	465	-107.241sft	0.464sft	0.129sft	1.26
G293	96-150H	-107.255sft	0.451sft	0.146sft	1.26
G379	96-154	-107.320sft	0.462sft	0.129sft	1.25
G307	93-37	-106.780sft	0.427sft	-0.147sft	-1.07
G343	93-57	-107.071sft	0.409sft	-0.162sft	-1.07
G344	93-60	-107.130sft	0.410sft	-0.155sft	-1.03
G295	TBM-P-6	-107.204sft	0.440sft	0.128sft	1.01
G368	TBM-C86	-106.185sft	0.404sft	-0.155sft	-1.00
G356	464	-107.176sft	0.444sft	0.122sft	0.99
G301	96-101	-106.539sft	0.473sft	-0.089sft	-0.99
G349	93-67	-107.188sft	0.413sft	-0.146sft	-0.98
G294	463	-107.128sft	0.450sft	0.105sft	0.89
G352	455	-107.151sft	0.456sft	0.098sft	0.88
G367	448	-106.284sft	0.433sft	-0.117sft	-0.88
G302	96-102H	-106.669sft	0.481sft	-0.069sft	-0.87
G309	93-47	-106.887sft	0.414sft	-0.128sft	-0.86
G289	456	-106.346sft	0.465sft	-0.086sft	-0.85
G374	L-87	-105.373sft	0.483sft	0.062sft	0.83
G375	Chief	-105.872sft	0.469sft	0.076sft	0.79
G372	Z85Reset	-106.158sft	0.431sft	-0.104sft	-0.78
G351	454	-107.068sft	0.449sft	0.091sft	0.77

G371	439	-106.031sft	0.415sft	-0.111sft	-0.76
G380	96-103	-106.613sft	0.462sft	-0.076sft	-0.73
G337	TBM-L-86	-106.155sft	0.351sft	0.134sft	0.72
G288	457	-106.488sft	0.459sft	-0.073sft	-0.68
G385	96-143	-107.216sft	0.440sft	0.084sft	0.66
G358	462	-107.029sft	0.447sft	0.077sft	0.64
G292	438	-105.948sft	0.426sft	-0.086sft	-0.62
G298	96-117	-106.851sft	0.434sft	-0.082sft	-0.62
G355	453	-106.944sft	0.443sft	0.075sft	0.61
G336	434	-106.200sft	0.374sft	0.105sft	0.61
G290	99-219	-106.170sft	0.432sft	-0.079sft	-0.59
G330	427	-106.094sft	0.378sft	0.101sft	0.59
G308	407	-106.560sft	0.446sft	-0.071sft	-0.59
G370	449	-106.370sft	0.438sft	-0.073sft	-0.57
G300	458	-106.551sft	0.450sft	-0.065sft	-0.55
G338	435	-106.478sft	0.397sft	0.083sft	0.52
G362	443	-106.498sft	0.407sft	0.076sft	0.50
G304	99-217	-105.465sft	0.399sft	-0.078sft	-0.49
G311	415	-106.659sft	0.433sft	-0.065sft	-0.49
G359	444	-106.611sft	0.415sft	0.070sft	0.48
G345	430	-106.870sft	0.421sft	-0.067sft	-0.47
G357	96-139	-107.136sft	0.434sft	0.060sft	0.46
G348	447	-107.080sft	0.436sft	0.058sft	0.45
G365	445	-106.843sft	0.433sft	0.058sft	0.44
G360	452	-106.777sft	0.437sft	0.056sft	0.43
G319	419	-106.064sft	0.408sft	0.065sft	0.43
G299	461	-106.962sft	0.444sft	0.052sft	0.42
G339	428	-106.424sft	0.400sft	0.065sft	0.41
G335	426	-105.928sft	0.394sft	0.066sft	0.41
G381	96-111	-106.733sft	0.441sft	-0.050sft	-0.40
G297	459	-106.658sft	0.443sft	-0.048sft	-0.38

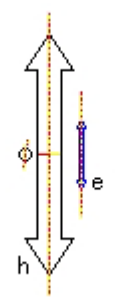
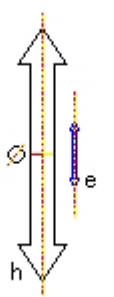
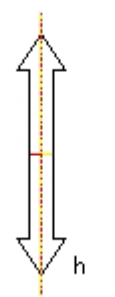
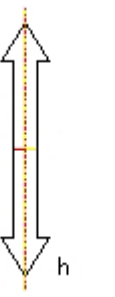
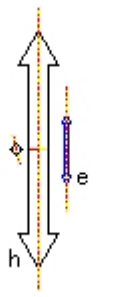
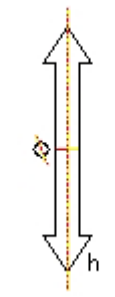
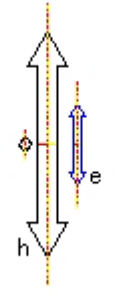
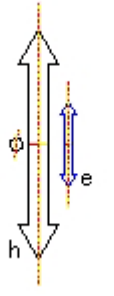
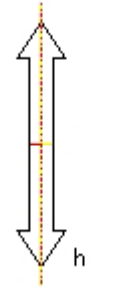
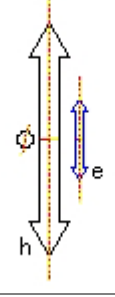
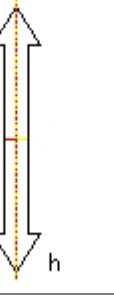
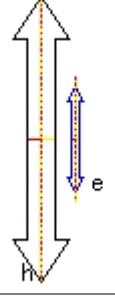
G350	J-6	-107.088sft	0.423sft	0.052sft	0.37
G321	420	-106.255sft	0.411sft	0.055sft	0.37
G373	440	-106.112sft	0.419sft	-0.053sft	-0.36
G361	442	-106.431sft	0.414sft	0.052sft	0.36
G328	408	-105.357sft	0.431sft	-0.048sft	-0.35
G318	418	-105.884sft	0.412sft	0.052sft	0.35
G317	422	-106.755sft	0.421sft	-0.046sft	-0.32
G382	96-121	-106.905sft	0.431sft	-0.042sft	-0.31
G333	431	-105.799sft	0.415sft	-0.044sft	-0.30
G364	433	-106.016sft	0.397sft	0.048sft	0.30
G347	446	-106.961sft	0.437sft	0.038sft	0.29
G332	423	-105.542sft	0.417sft	-0.041sft	-0.28
G322	412	-106.030sft	0.437sft	0.037sft	0.28
G341	436	-106.690sft	0.417sft	0.039sft	0.27
G323	403	-105.819sft	0.457sft	0.026sft	0.24
G324	404	-106.022sft	0.456sft	0.027sft	0.24
G320	411	-105.801sft	0.437sft	0.029sft	0.23
G316	U-86	-106.809sft	0.406sft	-0.035sft	-0.23
G313	406	-106.426sft	0.451sft	-0.026sft	-0.22
G331	416	-105.520sft	0.419sft	-0.031sft	-0.22
G378	400	-105.309sft	0.455sft	-0.024sft	-0.21
G377	409	-105.442sft	0.433sft	-0.027sft	-0.20
G291	96-108	-106.632sft	0.450sft	-0.022sft	-0.18
G346	437	-106.916sft	0.427sft	-0.025sft	-0.18
G363	451	-106.585sft	0.433sft	0.024sft	0.18
G305	424	-105.606sft	0.416sft	-0.025sft	-0.17
G366	450	-106.456sft	0.434sft	-0.022sft	-0.17
G383	96-128	-106.989sft	0.429sft	-0.022sft	-0.16
G314	413	-106.262sft	0.438sft	0.020sft	0.16
G384	96-132	-107.036sft	0.430sft	0.019sft	0.14
G376	402	-105.611sft	0.457sft	0.013sft	0.12

G310	414	-106.454sft	0.440sft	-0.012sft	-0.09
G340	429	-106.654sft	0.416sft	0.013sft	0.09
G312	405	-106.223sft	0.454sft	0.010sft	0.09
G303	99-218	-105.683sft	0.405sft	-0.013sft	-0.09
G329	425	-105.734sft	0.412sft	0.011sft	0.07
G327	401	-105.430sft	0.454sft	-0.008sft	-0.07
G326	417	-105.655sft	0.421sft	0.009sft	0.07
G369	441	-106.235sft	0.416sft	0.010sft	0.07
G325	410	-105.618sft	0.438sft	0.007sft	0.05
G334	432	-105.858sft	0.412sft	-0.008sft	-0.05
G342	421	-106.564sft	0.423sft	0.004sft	0.03
G296	460	-106.811sft	0.440sft	-0.002sft	-0.02

Histograms of Standardized Residuals

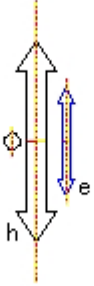
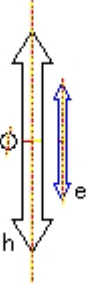
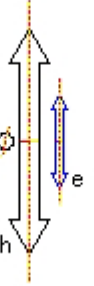
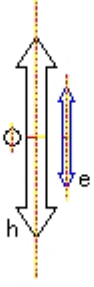
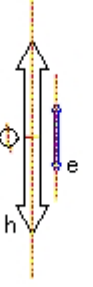
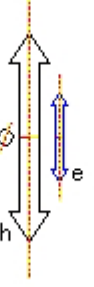
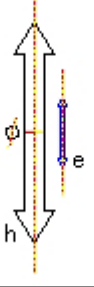
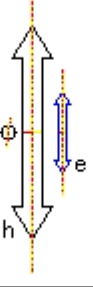
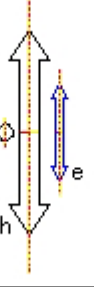
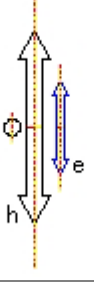




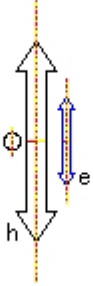
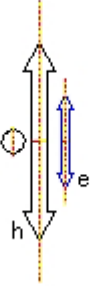
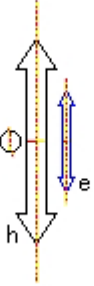
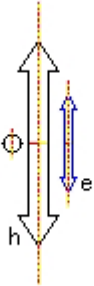
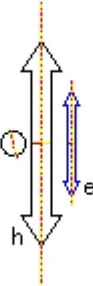
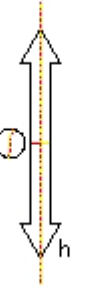
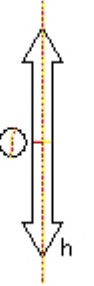

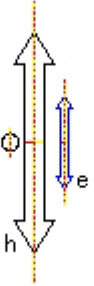
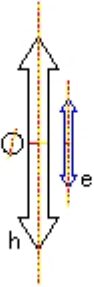
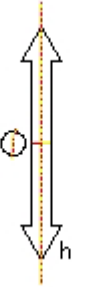
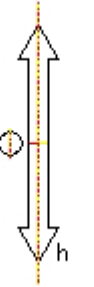
Point Error Ellipses

457	456	99-219
 <p style="text-align: left; margin-left: 10px;">82°</p>	 <p style="text-align: left; margin-left: 10px;">48°</p>	 <p style="text-align: left; margin-left: 10px;">0°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
96-150H	463	TBM-P-6
 <p style="text-align: left; margin-left: 10px;">0°</p>	 <p style="text-align: left; margin-left: 10px;">-71°</p>	 <p style="text-align: left; margin-left: 10px;">-69°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
460	459	96-117
 <p style="text-align: left; margin-left: 10px;">-87°</p>	 <p style="text-align: left; margin-left: 10px;">81°</p>	 <p style="text-align: left; margin-left: 10px;">0°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
458	96-101	96-102H
 <p style="text-align: left; margin-left: 10px;">73°</p>	 <p style="text-align: left; margin-left: 10px;">0°</p>	 <p style="text-align: left; margin-left: 10px;">0°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

438	99-218	99-217
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
24	93-40	93-37
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
93-47	414	415
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
405	407	406
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

413	93-50	U-86
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
422	418	419
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
420	412	403
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
404	411	410
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

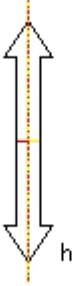
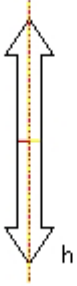
417	401	408
		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
425	427	416
		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
423	431	432
		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
426	434	TBM-L-86
		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

435	428	429
		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
436	421	93-57
		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
93-60	430	446
		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
437	93-67	J-6
		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

447	455	454
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
465	96-161	453
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
464	96-139	462
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
461	444	452
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

442	443	451
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
96-108	433	445
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
450	448	TBM-C86
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
441	449	439
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

Z85Reset	440	L-87
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
Chief	402	409
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
400	96-154	96-103
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
96-111	96-121	96-128
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

96-132	96-143	
		
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

Covariant Terms

Adjustment performed in **NAD 1983 (Conus)**

From Point	To Point		Components	A-posteriori Error (1.96σ)	Horiz. Precision (Ratio)	3D Precision (Ratio)
457	456	Az.	349°04'31.7198"	0°00'00.3157"	1:652512	1:652512
		ΔHt.	-15.607sft	0.070sft		
		ΔElev.	-15.750sft	0.162sft		
		Dist.	18370.651sft	0.028sft		
457	458	Az.	185°11'34.5149"	0°00'00.4350"	1:470638	1:470638
		ΔHt.	-6.550sft	0.054sft		
		ΔElev.	-6.487sft	0.148sft		
		Dist.	13410.915sft	0.028sft		
457	96-101	Az.	36°46'06.4523"	0°00'00.1904"	1:1078434	1:1078434
		ΔHt.	-111.607sft	0.080sft		
		ΔElev.	-111.557sft	0.135sft		
		Dist.	22719.651sft	0.021sft		
457	96-108	Az.	102°14'40.3528"	0°00'00.2873"	1:722787	1:722787
		ΔHt.	-49.620sft	0.053sft		
		ΔElev.	-49.477sft	0.135sft		
		Dist.	15149.314sft	0.021sft		
457	448	Az.	278°32'57.0970"	0°00'00.3136"	1:666442	1:666442
		ΔHt.	-37.833sft	0.062sft		

		ΔElev.	-38.037sft	0.148sft		
		Dist.	17860.792sft	0.027sft		
456	99-219	Az.	270°00'43.1467"	0°00'00.3858"	1:535122	1:535122
		ΔHt.	24.509sft	0.054sft		
		ΔElev.	24.333sft	0.127sft		
		Dist.	13490.304sft	0.025sft		
456	96-101	Az.	89°26'52.3080"	0°00'00.3047"	1:677520	1:677520
		ΔHt.	-96.000sft	0.063sft		
		ΔElev.	-95.807sft	0.127sft		
		Dist.	17081.884sft	0.025sft		
99-219	438	Az.	266°00'34.5808"	0°00'00.2673"	1:775560	1:775560
		ΔHt.	8.710sft	0.061sft		
		ΔElev.	8.488sft	0.120sft		
		Dist.	17981.645sft	0.023sft		
99-219	TBM-C86	Az.	217°22'50.7049"	0°00'00.3511"	1:577987	1:577987
		ΔHt.	-94.415sft	0.061sft		
		ΔElev.	-94.400sft	0.000sft		
		Dist.	16208.997sft	0.028sft		
99-219	Z85Reset	Az.	297°27'44.0896"	0°00'01.9552"	1:107095	1:107095
		ΔHt.	-58.848sft	0.030sft		
		ΔElev.	-58.860sft	0.000sft		
		Dist.	2654.672sft	0.025sft		
96-150H	463	Az.	289°14'59.1582"	0°00'00.2306"	1:898089	1:898089
		ΔHt.	92.834sft	0.054sft		
		ΔElev.	92.707sft	0.129sft		
		Dist.	16070.812sft	0.018sft		
96-150H	TBM-P-6	Az.	239°16'36.2203"	0°00'00.3095"	1:670300	1:670300
		ΔHt.	26.741sft	0.056sft		
		ΔElev.	26.690sft	0.000sft		
		Dist.	15648.208sft	0.023sft		
96-150H	465	Az.	221°27'06.3955"	0°00'00.2065"	1:996090	1:996090

		ΔHt.	126.614sft	0.085sft		
		ΔElev.	126.600sft	0.127sft		
		Dist.	24728.855sft	0.025sft		
96-150H	96-154	Az.	181°02'51.6161"	0°00'00.0000"	1:0	1:0
		ΔHt.	103.935sft	0.049sft		
		ΔElev.	104.000sft	0.000sft		
		Dist.	10593.878sft	0.000sft		
96-150H	96-143	Az.	358°57'26.0707"	0°00'00.0000"	1:0	1:0
		ΔHt.	51.699sft	0.054sft		
		ΔElev.	51.660sft	0.000sft		
		Dist.	12922.206sft	0.000sft		
463	TBM-P-6	Az.	172°35'21.3964"	0°00'00.3233"	1:636270	1:636270
		ΔHt.	-66.093sft	0.050sft		
		ΔElev.	-66.017sft	0.129sft		
		Dist.	13403.746sft	0.021sft		
463	453	Az.	289°10'45.3304"	0°00'00.2476"	1:833028	1:833028
		ΔHt.	1.297sft	0.061sft		
		ΔElev.	1.112sft	0.171sft		
		Dist.	18862.608sft	0.023sft		
463	464	Az.	184°23'03.5614"	0°00'00.4360"	1:469721	1:469721
		ΔHt.	13.767sft	0.046sft		
		ΔElev.	13.816sft	0.129sft		
		Dist.	11423.537sft	0.024sft		
463	96-139	Az.	40°18'22.4984"	0°00'00.1634"	1:1271897	1:1271897
		ΔHt.	16.716sft	0.077sft		
		ΔElev.	16.723sft	0.129sft		
		Dist.	22713.710sft	0.018sft		
463	462	Az.	341°55'28.8966"	0°00'00.4556"	1:445460	1:445460
		ΔHt.	-95.282sft	0.046sft		
		ΔElev.	-95.381sft	0.138sft		
		Dist.	11239.203sft	0.025sft		

463	461	Az.	357°25'49.9797"	0°00'00.2284"	1:893839	1:893839
		ΔHt.	11.616sft	0.070sft		
		ΔElev.	11.450sft	0.161sft		
		Dist.	20019.339sft	0.022sft		
TBM-P-6	453	Az.	314°55'19.6999"	0°00'00.1831"	1:1117955	1:1117955
		ΔHt.	67.389sft	0.090sft		
		ΔElev.	67.129sft	0.175sft		
		Dist.	27600.595sft	0.025sft		
TBM-P-6	464	Az.	306°09'51.0523"	0°00'01.6205"	1:127138	1:127138
		ΔHt.	79.860sft	0.029sft		
		ΔElev.	79.833sft	0.083sft		
		Dist.	3222.947sft	0.025sft		
460	459	Az.	354°55'41.1463"	0°00'00.2954"	1:692221	1:692221
		ΔHt.	14.077sft	0.063sft		
		ΔElev.	13.924sft	0.160sft		
		Dist.	17281.778sft	0.025sft		
460	96-117	Az.	34°36'16.5768"	0°00'00.1544"	1:1331507	1:1331507
		ΔHt.	-0.786sft	0.088sft		
		ΔElev.	-0.746sft	0.145sft		
		Dist.	25754.860sft	0.019sft		
460	461	Az.	182°49'42.2019"	0°00'00.2804"	1:727292	1:727292
		ΔHt.	-51.390sft	0.063sft		
		ΔElev.	-51.239sft	0.158sft		
		Dist.	16872.211sft	0.023sft		
460	452	Az.	228°23'32.4621"	0°00'00.1933"	1:1074711	1:1074711
		ΔHt.	-27.882sft	0.080sft		
		ΔElev.	-27.916sft	0.184sft		
		Dist.	23715.076sft	0.022sft		
460	442	Az.	269°53'01.5594"	0°00'00.1595"	1:1316495	1:1316495
		ΔHt.	-54.861sft	0.100sft		
		ΔElev.	-55.241sft	0.191sft		

		Dist.	32221.332sft	0.024sft		
460	451	Az.	269°39'51.5142"	0°00'00.2811"	1:742283	1:742283
		ΔHt.	-8.883sft	0.061sft		
		ΔElev.	-9.109sft	0.168sft		
		Dist.	18126.455sft	0.024sft		
460	96-128	Az.	90°13'25.5971"	0°00'00.2785"	1:748360	1:748360
		ΔHt.	-15.174sft	0.053sft		
		ΔElev.	-14.996sft	0.145sft		
		Dist.	14380.842sft	0.019sft		
459	96-117	Az.	76°08'26.7361"	0°00'00.2845"	1:729978	1:729978
		ΔHt.	-14.863sft	0.059sft		
		ΔElev.	-14.670sft	0.150sft		
		Dist.	16638.383sft	0.023sft		
459	458	Az.	0°30'06.5501"	0°00'00.4120"	1:496750	1:496750
		ΔHt.	9.327sft	0.058sft		
		ΔElev.	9.220sft	0.152sft		
		Dist.	14377.074sft	0.029sft		
459	450	Az.	264°27'10.1199"	0°00'00.3474"	1:596253	1:596253
		ΔHt.	7.933sft	0.056sft		
		ΔElev.	7.731sft	0.162sft		
		Dist.	16216.309sft	0.027sft		
459	449	Az.	315°14'14.7514"	0°00'00.2708"	1:760193	1:760193
		ΔHt.	23.555sft	0.069sft		
		ΔElev.	23.267sft	0.168sft		
		Dist.	20229.782sft	0.027sft		
96-117	96-111	Az.	359°40'19.5796"	0°00'00.0000"	1:0	1:0
		ΔHt.	19.958sft	0.049sft		
		ΔElev.	19.840sft	0.000sft		
		Dist.	10599.384sft	0.000sft		
96-117	96-121	Az.	180°43'49.8176"	0°00'00.0000"	1:0	1:0
		ΔHt.	0.116sft	0.050sft		

		ΔElev.	0.170sft	0.000sft		
		Dist.	10737.492sft	0.000sft		
458	96-108	Az.	57°39'18.1328"	0°00'00.2887"	1:713191	1:713191
		ΔHt.	-43.070sft	0.067sft		
		ΔElev.	-42.990sft	0.146sft		
		Dist.	18959.734sft	0.027sft		
96-101	96-102H	Az.	89°39'02.0776"	0°00'00.0000"	1:0	1:0
		ΔHt.	35.177sft	0.072sft		
		ΔElev.	35.307sft	0.187sft		
		Dist.	17451.810sft	0.000sft		
96-101	96-103	Az.	172°49'13.7655"	0°00'00.0000"	1:0	1:0
		ΔHt.	74.456sft	0.048sft		
		ΔElev.	74.530sft	0.000sft		
		Dist.	10383.211sft	0.000sft		
96-102H	96-108	Az.	217°06'50.2506"	0°00'00.0000"	1:0	1:0
		ΔHt.	26.810sft	0.099sft		
		ΔElev.	26.773sft	0.187sft		
		Dist.	26971.277sft	0.000sft		
438	99-218	Az.	274°54'04.5822"	0°00'00.3245"	1:639552	1:639552
		ΔHt.	-13.512sft	0.056sft		
		ΔElev.	-13.778sft	0.120sft		
		Dist.	14819.521sft	0.023sft		
438	TBM-C86	Az.	145°06'20.7847"	0°00'00.4264"	1:486966	1:486966
		ΔHt.	-103.125sft	0.055sft		
		ΔElev.	-102.888sft	0.120sft		
		Dist.	14170.166sft	0.029sft		
438	Z85Reset	Az.	80°55'46.4041"	0°00'00.3672"	1:566020	1:566020
		ΔHt.	-67.558sft	0.056sft		
		ΔElev.	-67.348sft	0.120sft		
		Dist.	15777.942sft	0.028sft		
99-218	423	Az.	265°26'27.7087"	0°00'00.2833"	1:743247	1:743247

		ΔHt.	60.700sft	0.058sft		
		ΔElev.	60.559sft	0.130sft		
		Dist.	15938.850sft	0.021sft		
99-218	431	Az.	173°55'26.1480"	0°00'00.3062"	1:650892	1:650892
		ΔHt.	-46.631sft	0.063sft		
		ΔElev.	-46.515sft	0.145sft		
		Dist.	15732.043sft	0.024sft		
99-217	424	Az.	133°54'15.5606"	0°00'00.2640"	1:792324	1:792324
		ΔHt.	-127.553sft	0.076sft		
		ΔElev.	-127.412sft	0.159sft		
		Dist.	22100.540sft	0.028sft		
99-217	408	Az.	268°27'26.2012"	0°00'00.3440"	1:601163	1:601163
		ΔHt.	-86.440sft	0.058sft		
		ΔElev.	-86.549sft	0.169sft		
		Dist.	15933.540sft	0.027sft		
99-217	416	Az.	184°09'56.7428"	0°00'00.3169"	1:644271	1:644271
		ΔHt.	-20.095sft	0.060sft		
		ΔElev.	-20.040sft	0.160sft		
		Dist.	15810.600sft	0.025sft		
99-217	423	Az.	94°12'23.4320"	0°00'00.2857"	1:741177	1:741177
		ΔHt.	-16.108sft	0.055sft		
		ΔElev.	-16.031sft	0.130sft		
		Dist.	15850.275sft	0.021sft		
424	425	Az.	179°59'01.1309"	0°00'00.3849"	1:527264	1:527264
		ΔHt.	67.990sft	0.063sft		
		ΔElev.	68.118sft	0.165sft		
		Dist.	16176.973sft	0.031sft		
424	423	Az.	359°34'11.6407"	0°00'00.4348"	1:455345	1:455345
		ΔHt.	111.445sft	0.059sft		
		ΔElev.	111.381sft	0.164sft		
		Dist.	14163.587sft	0.031sft		

93-40	93-37	Az.	272°01'52.5593"	0°00'00.7103"	1:293111	1:293111
		ΔHt.	-11.905sft	0.047sft		
		ΔElev.	-12.010sft	0.000sft		
		Dist.	10189.044sft	0.035sft		
93-40	93-47	Az.	87°43'12.1937"	0°00'00.6779"	1:305669	1:305669
		ΔHt.	12.078sft	0.047sft		
		ΔElev.	12.080sft	0.000sft		
		Dist.	10511.944sft	0.034sft		
93-37	407	Az.	359°46'08.4223"	0°00'00.3764"	1:539911	1:539911
		ΔHt.	46.658sft	0.072sft		
		ΔElev.	46.438sft	0.169sft		
		Dist.	18526.495sft	0.034sft		
93-37	Chief	Az.	306°53'27.4438"	0°00'00.0977"	1:2149447	1:2149447
		ΔHt.	53.878sft	0.248sft		
		ΔElev.	52.970sft	0.000sft		
		Dist.	80875.832sft	0.038sft		
93-47	407	Az.	311°41'34.0789"	0°00'00.2220"	1:933342	1:933342
		ΔHt.	22.675sft	0.091sft		
		ΔElev.	22.348sft	0.169sft		
		Dist.	27781.412sft	0.030sft		
93-47	93-50	Az.	89°41'32.2224"	0°00'00.5321"	1:390664	1:390664
		ΔHt.	-1.247sft	0.041sft		
		ΔElev.	-1.100sft	0.000sft		
		Dist.	10528.944sft	0.027sft		
93-47	U-86	Az.	61°16'35.6425"	0°00'00.8667"	1:236859	1:236859
		ΔHt.	5.128sft	0.040sft		
		ΔElev.	5.050sft	0.000sft		
		Dist.	7684.740sft	0.032sft		
93-47	422	Az.	34°01'06.0051"	0°00'00.3052"	1:664906	1:664906
		ΔHt.	-28.434sft	0.068sft		
		ΔElev.	-28.566sft	0.143sft		

		Dist.	18755.018sft	0.028sft		
414	415	Az.	175°37'06.2947"	0°00'00.3540"	1:580085	1:580085
		ΔHt.	34.763sft	0.067sft		
		ΔElev.	34.967sft	0.174sft		
		Dist.	17522.619sft	0.030sft		
414	405	Az.	319°15'57.8087"	0°00'00.2825"	1:730290	1:730290
		ΔHt.	6.316sft	0.065sft		
		ΔElev.	6.085sft	0.184sft		
		Dist.	19086.515sft	0.026sft		
414	407	Az.	220°35'27.7690"	0°00'00.2803"	1:734547	1:734547
		ΔHt.	46.420sft	0.069sft		
		ΔElev.	46.526sft	0.180sft		
		Dist.	19614.765sft	0.027sft		
414	406	Az.	261°41'35.2056"	0°00'00.4777"	1:433050	1:433050
		ΔHt.	-6.354sft	0.047sft		
		ΔElev.	-6.382sft	0.151sft		
		Dist.	11931.620sft	0.028sft		
414	413	Az.	4°43'13.2642"	0°00'00.3819"	1:537169	1:537169
		ΔHt.	-33.804sft	0.056sft		
		ΔElev.	-33.996sft	0.163sft		
		Dist.	14574.774sft	0.027sft		
415	407	Az.	280°21'27.8640"	0°00'00.4150"	1:499648	1:499648
		ΔHt.	11.657sft	0.053sft		
		ΔElev.	11.558sft	0.157sft		
		Dist.	14334.606sft	0.029sft		
415	422	Az.	91°09'38.7087"	0°00'00.3828"	1:543703	1:543703
		ΔHt.	-39.451sft	0.061sft		
		ΔElev.	-39.355sft	0.162sft		
		Dist.	17140.947sft	0.032sft		
405	406	Az.	177°40'34.0473"	0°00'00.3771"	1:544500	1:544500
		ΔHt.	-12.670sft	0.062sft		

		ΔElev.	-12.467sft	0.172sft		
		Dist.	16199.571sft	0.030sft		
405	413	Az.	89°42'27.1174"	0°00'00.3428"	1:606791	1:606791
		ΔHt.	-40.120sft	0.047sft		
		ΔElev.	-40.081sft	0.160sft		
		Dist.	13654.393sft	0.023sft		
405	404	Az.	358°24'33.8848"	0°00'00.3453"	1:590575	1:590575
		ΔHt.	-45.022sft	0.058sft		
		ΔElev.	-45.223sft	0.170sft		
		Dist.	15550.320sft	0.026sft		
407	406	Az.	4°07'15.3496"	0°00'00.4631"	1:443440	1:443440
		ΔHt.	-52.774sft	0.054sft		
		ΔElev.	-52.907sft	0.157sft		
		Dist.	13205.750sft	0.030sft		
413	412	Az.	1°41'26.8034"	0°00'00.3068"	1:664050	1:664050
		ΔHt.	49.772sft	0.057sft		
		ΔElev.	49.540sft	0.170sft		
		Dist.	15685.209sft	0.024sft		
413	404	Az.	317°43'21.4481"	0°00'00.2174"	1:952908	1:952908
		ΔHt.	-4.902sft	0.069sft		
		ΔElev.	-5.142sft	0.192sft		
		Dist.	20925.471sft	0.022sft		
93-50	U-86	Az.	313°50'39.9787"	0°00'01.2751"	1:163050	1:163050
		ΔHt.	6.375sft	0.036sft		
		ΔElev.	6.150sft	0.000sft		
		Dist.	5252.277sft	0.032sft		
93-50	422	Az.	359°53'29.2946"	0°00'00.3704"	1:547210	1:547210
		ΔHt.	-27.187sft	0.059sft		
		ΔElev.	-27.466sft	0.143sft		
		Dist.	15488.752sft	0.028sft		
93-50	93-57	Az.	89°38'27.9214"	0°00'00.6341"	1:340421	1:340421

		ΔHt.	-24.906sft	0.048sft		
		ΔElev.	-24.870sft	0.000sft		
		Dist.	10810.711sft	0.032sft		
93-50	93-60	Az.	89°31'56.9277"	0°00'00.3535"	1:636087	1:636087
		ΔHt.	-8.226sft	0.076sft		
		ΔElev.	-8.130sft	0.000sft		
		Dist.	21362.231sft	0.034sft		
422	421	Az.	5°15'34.2730"	0°00'00.4456"	1:444849	1:444849
		ΔHt.	-12.377sft	0.073sft		
		ΔElev.	-12.568sft	0.168sft		
		Dist.	16620.167sft	0.037sft		
422	430	Az.	87°02'13.9591"	0°00'00.4254"	1:493390	1:493390
		ΔHt.	18.538sft	0.063sft		
		ΔElev.	18.653sft	0.158sft		
		Dist.	16335.627sft	0.033sft		
418	419	Az.	179°10'30.6454"	0°00'00.5258"	1:386234	1:386234
		ΔHt.	-41.354sft	0.057sft		
		ΔElev.	-41.175sft	0.158sft		
		Dist.	12746.400sft	0.033sft		
418	411	Az.	283°01'18.7476"	0°00'00.3544"	1:593349	1:593349
		ΔHt.	-4.607sft	0.063sft		
		ΔElev.	-4.689sft	0.179sft		
		Dist.	17624.281sft	0.030sft		
418	417	Az.	356°26'05.1489"	0°00'00.2985"	1:683050	1:683050
		ΔHt.	32.058sft	0.068sft		
		ΔElev.	31.829sft	0.176sft		
		Dist.	18640.553sft	0.027sft		
418	426	Az.	85°17'20.8019"	0°00'00.4004"	1:519124	1:519124
		ΔHt.	-17.098sft	0.053sft		
		ΔElev.	-17.054sft	0.166sft		
		Dist.	14558.027sft	0.028sft		

419	420	Az.	179°08'10.3342"	0°00'00.5432"	1:377051	1:377051
		ΔHt.	0.211sft	0.053sft		
		ΔElev.	0.402sft	0.154sft		
		Dist.	12082.899sft	0.032sft		
419	412	Az.	268°45'16.7617"	0°00'00.3607"	1:575607	1:575607
		ΔHt.	27.514sft	0.063sft		
		ΔElev.	27.480sft	0.179sft		
		Dist.	18065.462sft	0.031sft		
420	434	Az.	67°16'26.8069"	0°00'00.1605"	1:1296553	1:1296553
		ΔHt.	-81.154sft	0.103sft		
		ΔElev.	-81.209sft	0.221sft		
		Dist.	32652.142sft	0.025sft		
420	435	Az.	97°06'48.0634"	0°00'00.1641"	1:1274779	1:1274779
		ΔHt.	-92.590sft	0.094sft		
		ΔElev.	-92.367sft	0.224sft		
		Dist.	30461.155sft	0.024sft		
420	428	Az.	112°58'32.3657"	0°00'00.3786"	1:552058	1:552058
		ΔHt.	-50.216sft	0.056sft		
		ΔElev.	-50.046sft	0.173sft		
		Dist.	15748.997sft	0.029sft		
420	429	Az.	142°20'27.7250"	0°00'00.2175"	1:944527	1:944527
		ΔHt.	-25.546sft	0.083sft		
		ΔElev.	-25.147sft	0.202sft		
		Dist.	24914.772sft	0.026sft		
420	421	Az.	179°50'17.0548"	0°00'00.3117"	1:649469	1:649469
		ΔHt.	-5.732sft	0.074sft		
		ΔElev.	-5.423sft	0.181sft		
		Dist.	19796.384sft	0.030sft		
412	404	Az.	269°13'48.0976"	0°00'00.3465"	1:600340	1:600340
		ΔHt.	-54.674sft	0.050sft		
		ΔElev.	-54.683sft	0.165sft		

		Dist.	14541.105sft	0.024sft		
412	411	Az.	2°19'19.5794"	0°00'00.3242"	1:630019	1:630019
		ΔHt.	9.234sft	0.063sft		
		ΔElev.	9.005sft	0.177sft		
		Dist.	17123.585sft	0.027sft		
403	404	Az.	178°57'43.6936"	0°00'00.3879"	1:527927	1:527927
		ΔHt.	-28.118sft	0.061sft		
		ΔElev.	-27.915sft	0.173sft		
		Dist.	15849.526sft	0.030sft		
403	411	Az.	84°35'41.9655"	0°00'00.3809"	1:547126	1:547126
		ΔHt.	35.790sft	0.056sft		
		ΔElev.	35.773sft	0.171sft		
		Dist.	15579.169sft	0.028sft		
403	402	Az.	359°36'57.4377"	0°00'00.4134"	1:496251	1:496251
		ΔHt.	63.903sft	0.063sft		
		ΔElev.	63.695sft	0.174sft		
		Dist.	15993.017sft	0.032sft		
404	411	Az.	41°19'21.3783"	0°00'00.2358"	1:877022	1:877022
		ΔHt.	63.908sft	0.079sft		
		ΔElev.	63.688sft	0.199sft		
		Dist.	23054.780sft	0.026sft		
411	410	Az.	359°53'08.3711"	0°00'00.4042"	1:501064	1:501064
		ΔHt.	27.100sft	0.058sft		
		ΔElev.	26.916sft	0.166sft		
		Dist.	14914.131sft	0.030sft		
411	417	Az.	47°32'03.6267"	0°00'00.2504"	1:826546	1:826546
		ΔHt.	36.665sft	0.075sft		
		ΔElev.	36.518sft	0.195sft		
		Dist.	21691.352sft	0.026sft		
410	417	Az.	90°57'43.3597"	0°00'00.3747"	1:560461	1:560461
		ΔHt.	9.565sft	0.057sft		

		ΔElev.	9.602sft	0.174sft		
		Dist.	16033.345sft	0.029sft		
410	401	Az.	316°27'15.5358"	0°00'00.3045"	1:681268	1:681268
		ΔHt.	25.970sft	0.074sft		
		ΔElev.	25.783sft	0.198sft		
		Dist.	21320.379sft	0.031sft		
417	425	Az.	89°52'20.9230"	0°00'00.3459"	1:601923	1:601923
		ΔHt.	-9.063sft	0.054sft		
		ΔElev.	-8.984sft	0.170sft		
		Dist.	15668.466sft	0.026sft		
417	416	Az.	354°51'31.3719"	0°00'00.3661"	1:557322	1:557322
		ΔHt.	30.405sft	0.063sft		
		ΔElev.	30.270sft	0.165sft		
		Dist.	15832.666sft	0.028sft		
417	426	Az.	138°00'35.6954"	0°00'00.2187"	1:942031	1:942031
		ΔHt.	-49.156sft	0.077sft		
		ΔElev.	-48.883sft	0.186sft		
		Dist.	23421.246sft	0.025sft		
401	408	Az.	43°17'14.3675"	0°00'00.2556"	1:803045	1:803045
		ΔHt.	-52.346sft	0.073sft		
		ΔElev.	-52.420sft	0.190sft		
		Dist.	21134.437sft	0.026sft		
401	402	Az.	183°10'49.2556"	0°00'00.3546"	1:578641	1:578641
		ΔHt.	-24.958sft	0.061sft		
		ΔElev.	-24.777sft	0.174sft		
		Dist.	15857.283sft	0.027sft		
401	409	Az.	81°47'32.5158"	0°00'00.3706"	1:558585	1:558585
		ΔHt.	20.013sft	0.053sft		
		ΔElev.	20.025sft	0.165sft		
		Dist.	14681.403sft	0.026sft		
401	400	Az.	356°34'38.7093"	0°00'00.3812"	1:538187	1:538187

		ΔHt.	3.870sft	0.062sft		
		ΔElev.	3.749sft	0.178sft		
		Dist.	15641.514sft	0.029sft		
408	409	Az.	179°51'44.6156"	0°00'00.4275"	1:481404	1:481404
		ΔHt.	72.360sft	0.053sft		
		ΔElev.	72.445sft	0.162sft		
		Dist.	13288.404sft	0.028sft		
408	400	Az.	270°53'12.7940"	0°00'00.3790"	1:545725	1:545725
		ΔHt.	56.216sft	0.056sft		
		ΔElev.	56.169sft	0.168sft		
		Dist.	15426.480sft	0.028sft		
425	427	Az.	179°42'33.2525"	0°00'00.1830"	1:1121169	1:1121169
		ΔHt.	-58.595sft	0.105sft		
		ΔElev.	-58.235sft	0.195sft		
		Dist.	30480.056sft	0.027sft		
425	432	Az.	89°45'05.6530"	0°00'00.3527"	1:592300	1:592300
		ΔHt.	-4.328sft	0.054sft		
		ΔElev.	-4.204sft	0.166sft		
		Dist.	15353.141sft	0.026sft		
425	426	Az.	180°02'10.9156"	0°00'00.2876"	1:709067	1:709067
		ΔHt.	-40.093sft	0.064sft		
		ΔElev.	-39.899sft	0.166sft		
		Dist.	17442.961sft	0.025sft		
427	426	Az.	359°16'19.0142"	0°00'00.4008"	1:512464	1:512464
		ΔHt.	18.502sft	0.051sft		
		ΔElev.	18.336sft	0.153sft		
		Dist.	13037.760sft	0.025sft		
427	434	Az.	91°22'47.9402"	0°00'00.3252"	1:635461	1:635461
		ΔHt.	-86.698sft	0.054sft		
		ΔElev.	-86.592sft	0.173sft		
		Dist.	15804.492sft	0.025sft		

427	TBM-L-86	Az.	104°36'40.1104"	0°00'00.6885"	1:297731	1:297731
		ΔHt.	5.768sft	0.046sft		
		ΔElev.	5.829sft	0.135sft		
		Dist.	9560.480sft	0.032sft		
427	433	Az.	45°55'20.9679"	0°00'00.2433"	1:856807	1:856807
		ΔHt.	37.315sft	0.075sft		
		ΔElev.	37.238sft	0.190sft		
		Dist.	22122.955sft	0.026sft		
416	423	Az.	49°15'18.7845"	0°00'00.2520"	1:805677	1:805677
		ΔHt.	3.987sft	0.077sft		
		ΔElev.	4.009sft	0.189sft		
		Dist.	22379.674sft	0.028sft		
416	409	Az.	277°54'43.1022"	0°00'00.4053"	1:511495	1:511495
		ΔHt.	6.014sft	0.055sft		
		ΔElev.	5.936sft	0.169sft		
		Dist.	14898.187sft	0.029sft		
423	431	Az.	129°16'46.8971"	0°00'00.2645"	1:810424	1:810424
		ΔHt.	-107.331sft	0.079sft		
		ΔElev.	-107.073sft	0.179sft		
		Dist.	22689.678sft	0.028sft		
431	432	Az.	187°33'33.9919"	0°00'00.3579"	1:559026	1:559026
		ΔHt.	59.548sft	0.063sft		
		ΔElev.	59.607sft	0.162sft		
		Dist.	16046.428sft	0.029sft		
431	448	Az.	89°29'14.1368"	0°00'00.1779"	1:1187687	1:1187687
		ΔHt.	4.699sft	0.095sft		
		ΔElev.	5.184sft	0.185sft		
		Dist.	30380.210sft	0.026sft		
431	439	Az.	69°40'48.5899"	0°00'00.3782"	1:553989	1:553989
		ΔHt.	65.266sft	0.056sft		
		ΔElev.	65.498sft	0.152sft		

		Dist.	15229.632sft	0.027sft		
432	426	Az.	221°18'10.7187"	0°00'00.2280"	1:912577	1:912577
		ΔHt.	-35.765sft	0.080sft		
		ΔElev.	-35.695sft	0.187sft		
		Dist.	23294.593sft	0.026sft		
432	433	Az.	177°24'45.8640"	0°00'00.3578"	1:566565	1:566565
		ΔHt.	-16.952sft	0.058sft		
		ΔElev.	-16.794sft	0.158sft		
		Dist.	15172.624sft	0.027sft		
432	449	Az.	89°43'47.2865"	0°00'00.1718"	1:1219478	1:1219478
		ΔHt.	-9.337sft	0.107sft		
		ΔElev.	-8.825sft	0.213sft		
		Dist.	34600.173sft	0.028sft		
426	433	Az.	81°39'53.0263"	0°00'00.3212"	1:647038	1:647038
		ΔHt.	18.813sft	0.055sft		
		ΔElev.	18.902sft	0.174sft		
		Dist.	16230.209sft	0.025sft		
434	TBM-L-86	Az.	252°48'23.2791"	0°00'00.9648"	1:214901	1:214901
		ΔHt.	92.466sft	0.042sft		
		ΔElev.	92.421sft	0.116sft		
		Dist.	6856.357sft	0.032sft		
434	435	Az.	179°41'21.6894"	0°00'00.2883"	1:698507	1:698507
		ΔHt.	-11.435sft	0.060sft		
		ΔElev.	-11.158sft	0.168sft		
		Dist.	16386.715sft	0.023sft		
434	428	Az.	219°50'48.6299"	0°00'00.2449"	1:834382	1:834382
		ΔHt.	30.939sft	0.085sft		
		ΔElev.	31.163sft	0.198sft		
		Dist.	24411.247sft	0.029sft		
434	444	Az.	150°07'13.9998"	0°00'00.2249"	1:921260	1:921260
		ΔHt.	-8.053sft	0.074sft		

		ΔElev.	-7.642sft	0.181sft		
		Dist.	21789.310sft	0.024sft		
434	442	Az.	91°54'47.2930"	0°00'00.2753"	1:755869	1:755869
		ΔHt.	39.134sft	0.059sft		
		ΔElev.	39.365sft	0.165sft		
		Dist.	17645.922sft	0.023sft		
434	443	Az.	134°32'51.0305"	0°00'00.3646"	1:571232	1:571232
		ΔHt.	56.153sft	0.057sft		
		ΔElev.	56.451sft	0.163sft		
		Dist.	15670.689sft	0.027sft		
434	433	Az.	0°22'35.9767"	0°00'00.3320"	1:618646	1:618646
		ΔHt.	124.013sft	0.059sft		
		ΔElev.	123.829sft	0.162sft		
		Dist.	15770.303sft	0.025sft		
435	428	Az.	261°29'01.3142"	0°00'00.3775"	1:557435	1:557435
		ΔHt.	42.374sft	0.057sft		
		ΔElev.	42.321sft	0.173sft		
		Dist.	15905.431sft	0.029sft		
435	429	Az.	223°19'11.9965"	0°00'00.2502"	1:824770	1:824770
		ΔHt.	67.044sft	0.075sft		
		ΔElev.	67.220sft	0.184sft		
		Dist.	21899.959sft	0.027sft		
435	436	Az.	181°27'46.2917"	0°00'00.4031"	1:504299	1:504299
		ΔHt.	85.055sft	0.052sft		
		ΔElev.	85.268sft	0.150sft		
		Dist.	13179.195sft	0.026sft		
435	444	Az.	103°06'21.8349"	0°00'00.4823"	1:437558	1:437558
		ΔHt.	3.383sft	0.043sft		
		ΔElev.	3.516sft	0.144sft		
		Dist.	11054.007sft	0.025sft		
435	452	Az.	89°44'23.9357"	0°00'00.1619"	1:1315041	1:1315041

		ΔHt.	77.549sft	0.099sft		
		ΔElev.	77.848sft	0.202sft		
		Dist.	32069.628sft	0.024sft		
429	436	Az.	79°19'45.8456"	0°00'00.3954"	1:526657	1:526657
		ΔHt.	18.011sft	0.054sft		
		ΔElev.	18.047sft	0.166sft		
		Dist.	14945.200sft	0.028sft		
429	421	Az.	269°45'48.9011"	0°00'00.4157"	1:504351	1:504351
		ΔHt.	19.814sft	0.057sft		
		ΔElev.	19.724sft	0.167sft		
		Dist.	15166.156sft	0.030sft		
436	446	Az.	136°02'00.4544"	0°00'00.1984"	1:1040442	1:1040442
		ΔHt.	-0.243sft	0.073sft		
		ΔElev.	0.028sft	0.182sft		
		Dist.	22364.806sft	0.021sft		
436	437	Az.	176°06'51.0066"	0°00'00.3334"	1:612378	1:612378
		ΔHt.	19.528sft	0.061sft		
		ΔElev.	19.754sft	0.160sft		
		Dist.	16251.290sft	0.027sft		
436	445	Az.	97°26'27.9642"	0°00'00.2990"	1:703054	1:703054
		ΔHt.	-73.908sft	0.061sft		
		ΔElev.	-73.755sft	0.176sft		
		Dist.	18336.018sft	0.026sft		
93-57	93-60	Az.	89°26'49.3581"	0°00'00.6710"	1:332231	1:332231
		ΔHt.	16.681sft	0.050sft		
		ΔElev.	16.740sft	0.000sft		
		Dist.	10551.559sft	0.032sft		
93-57	430	Az.	18°37'33.8382"	0°00'00.3671"	1:542082	1:542082
		ΔHt.	16.258sft	0.066sft		
		ΔElev.	16.057sft	0.150sft		
		Dist.	17161.732sft	0.032sft		

93-60	430	Az.	342°36'30.2059"	0°00'00.3675"	1:556901	1:556901
		ΔHt.	-0.423sft	0.066sft		
		ΔElev.	-0.683sft	0.150sft		
		Dist.	16937.571sft	0.030sft		
93-60	93-67	Az.	90°13'41.8895"	0°00'00.6432"	1:324955	1:324955
		ΔHt.	-0.338sft	0.047sft		
		ΔElev.	-0.280sft	0.000sft		
		Dist.	10587.590sft	0.033sft		
430	437	Az.	81°47'50.2038"	0°00'00.3971"	1:520414	1:520414
		ΔHt.	-13.190sft	0.060sft		
		ΔElev.	-13.143sft	0.162sft		
		Dist.	16352.035sft	0.031sft		
446	437	Az.	269°34'21.4641"	0°00'00.3386"	1:613903	1:613903
		ΔHt.	19.771sft	0.051sft		
		ΔElev.	19.726sft	0.157sft		
		Dist.	14425.648sft	0.023sft		
446	J-6	Az.	190°21'22.6055"	0°00'00.2518"	1:806139	1:806139
		ΔHt.	37.806sft	0.080sft		
		ΔElev.	37.933sft	0.165sft		
		Dist.	22159.354sft	0.027sft		
446	447	Az.	175°32'53.7944"	0°00'00.3967"	1:518487	1:518487
		ΔHt.	25.543sft	0.073sft		
		ΔElev.	25.663sft	0.169sft		
		Dist.	17455.727sft	0.034sft		
446	455	Az.	133°59'42.2160"	0°00'00.2179"	1:955139	1:955139
		ΔHt.	6.877sft	0.079sft		
		ΔElev.	7.067sft	0.195sft		
		Dist.	23853.235sft	0.025sft		
446	454	Az.	100°07'15.1311"	0°00'00.3309"	1:637877	1:637877
		ΔHt.	-25.063sft	0.060sft		
		ΔElev.	-24.956sft	0.166sft		

		Dist.	17384.683sft	0.027sft		
446	453	Az.	49°22'19.9330"	0°00'00.2284"	1:904737	1:904737
		ΔHt.	-41.091sft	0.075sft		
		ΔElev.	-41.108sft	0.181sft		
		Dist.	22268.879sft	0.025sft		
446	445	Az.	10°59'16.4644"	0°00'00.3690"	1:549582	1:549582
		ΔHt.	-73.665sft	0.053sft		
		ΔElev.	-73.783sft	0.155sft		
		Dist.	13976.826sft	0.025sft		
437	93-67	Az.	181°40'48.6906"	0°00'00.3211"	1:638244	1:638244
		ΔHt.	13.275sft	0.069sft		
		ΔElev.	13.547sft	0.159sft		
		Dist.	18542.781sft	0.029sft		
93-67	J-6	Az.	105°58'44.1810"	0°00'00.5179"	1:402610	1:402610
		ΔHt.	4.760sft	0.049sft		
		ΔElev.	4.660sft	0.000sft		
		Dist.	11440.547sft	0.028sft		
93-67	447	Az.	85°37'35.7011"	0°00'00.3882"	1:533781	1:533781
		ΔHt.	-7.503sft	0.061sft		
		ΔElev.	-7.610sft	0.116sft		
		Dist.	16381.922sft	0.031sft		
J-6	447	Az.	50°31'29.7774"	0°00'00.9111"	1:226837	1:226837
		ΔHt.	-12.263sft	0.047sft		
		ΔElev.	-12.270sft	0.116sft		
		Dist.	6915.030sft	0.030sft		
J-6	455	Az.	76°05'48.9177"	0°00'00.2823"	1:737425	1:737425
		ΔHt.	-30.929sft	0.073sft		
		ΔElev.	-30.866sft	0.153sft		
		Dist.	21780.793sft	0.030sft		
455	454	Az.	359°50'48.0110"	0°00'00.4024"	1:504106	1:504106
		ΔHt.	-31.940sft	0.053sft		

		ΔElev.	-32.023sft	0.158sft		
		Dist.	13513.517sft	0.027sft		
455	465	Az.	86°20'20.7616"	0°00'00.3479"	1:598825	1:598825
		ΔHt.	-15.484sft	0.057sft		
		ΔElev.	-15.394sft	0.155sft		
		Dist.	16451.809sft	0.027sft		
455	464	Az.	51°05'29.8312"	0°00'00.2677"	1:765397	1:765397
		ΔHt.	-35.497sft	0.075sft		
		ΔElev.	-35.471sft	0.160sft		
		Dist.	21485.069sft	0.028sft		
454	465	Az.	127°08'28.1685"	0°00'00.2817"	1:738790	1:738790
		ΔHt.	16.456sft	0.070sft		
		ΔElev.	16.629sft	0.178sft		
		Dist.	20641.552sft	0.028sft		
454	464	Az.	90°03'55.9440"	0°00'00.3630"	1:587437	1:587437
		ΔHt.	-3.557sft	0.060sft		
		ΔElev.	-3.448sft	0.155sft		
		Dist.	16754.808sft	0.029sft		
465	96-161	Az.	99°44'34.8569"	0°00'00.3171"	1:654699	1:654699
		ΔHt.	-17.618sft	0.059sft		
		ΔElev.	-17.520sft	0.127sft		
		Dist.	16178.111sft	0.025sft		
96-161	96-154	Az.	1°15'03.2501"	0°00'00.0000"	1:0	1:0
		ΔHt.	-5.061sft	0.049sft		
		ΔElev.	-5.080sft	0.000sft		
		Dist.	10693.755sft	0.000sft		
453	464	Az.	136°01'36.2902"	0°00'00.2113"	1:974325	1:974325
		ΔHt.	12.471sft	0.080sft		
		ΔElev.	12.703sft	0.176sft		
		Dist.	24420.157sft	0.025sft		
453	452	Az.	0°01'45.4985"	0°00'00.3310"	1:617531	1:617531

		ΔHt.	33.827sft	0.056sft		
		ΔElev.	33.660sft	0.161sft		
		Dist.	14906.655sft	0.024sft		
453	445	Az.	266°54'22.1237"	0°00'00.3792"	1:550100	1:550100
		ΔHt.	-32.574sft	0.050sft		
		ΔElev.	-32.675sft	0.157sft		
		Dist.	14258.409sft	0.026sft		
96-139	462	Az.	249°58'47.7364"	0°00'00.2535"	1:834413	1:834413
		ΔHt.	-111.997sft	0.065sft		
		ΔElev.	-112.104sft	0.153sft		
		Dist.	19353.601sft	0.023sft		
96-139	461	Az.	279°46'52.4799"	0°00'00.2551"	1:816778	1:816778
		ΔHt.	-5.100sft	0.053sft		
		ΔElev.	-5.274sft	0.148sft		
		Dist.	15818.652sft	0.019sft		
96-139	96-132	Az.	359°00'56.9642"	0°00'00.0000"	1:0	1:0
		ΔHt.	-1.610sft	0.053sft		
		ΔElev.	-1.710sft	0.000sft		
		Dist.	12259.591sft	0.000sft		
96-139	96-143	Az.	178°37'11.9455"	0°00'00.0000"	1:0	1:0
		ΔHt.	-57.851sft	0.046sft		
		ΔElev.	-57.770sft	0.000sft		
		Dist.	9693.171sft	0.000sft		
462	461	Az.	15°31'43.3181"	0°00'00.5443"	1:376954	1:376954
		ΔHt.	106.898sft	0.042sft		
		ΔElev.	106.830sft	0.131sft		
		Dist.	9667.962sft	0.026sft		
461	452	Az.	273°44'11.2108"	0°00'00.2956"	1:707931	1:707931
		ΔHt.	23.508sft	0.057sft		
		ΔElev.	23.323sft	0.165sft		
		Dist.	16935.468sft	0.024sft		

444	452	Az.	82°55'46.1884"	0°00'00.2395"	1:872757	1:872757
		ΔHt.	74.166sft	0.070sft		
		ΔElev.	74.332sft	0.182sft		
		Dist.	21467.673sft	0.025sft		
444	442	Az.	20°21'16.4609"	0°00'00.2556"	1:800268	1:800268
		ΔHt.	47.187sft	0.070sft		
		ΔElev.	47.007sft	0.184sft		
		Dist.	19519.633sft	0.024sft		
444	443	Az.	2°17'44.1765"	0°00'00.7211"	1:285203	1:285203
		ΔHt.	64.206sft	0.040sft		
		ΔElev.	64.092sft	0.126sft		
		Dist.	7906.183sft	0.028sft		
452	442	Az.	317°13'16.7072"	0°00'00.2210"	1:928680	1:928680
		ΔHt.	-26.980sft	0.072sft		
		ΔElev.	-27.325sft	0.182sft		
		Dist.	21351.021sft	0.023sft		
452	451	Az.	358°30'49.8532"	0°00'00.3218"	1:633550	1:633550
		ΔHt.	18.999sft	0.059sft		
		ΔElev.	18.807sft	0.166sft		
		Dist.	15646.191sft	0.025sft		
452	445	Az.	222°15'43.2708"	0°00'00.2607"	1:795897	1:795897
		ΔHt.	-66.402sft	0.073sft		
		ΔElev.	-66.336sft	0.185sft		
		Dist.	21181.844sft	0.027sft		
442	443	Az.	211°54'41.4005"	0°00'00.4653"	1:439737	1:439737
		ΔHt.	17.019sft	0.051sft		
		ΔElev.	17.085sft	0.152sft		
		Dist.	12250.592sft	0.028sft		
442	451	Az.	90°05'18.5778"	0°00'00.3784"	1:551312	1:551312
		ΔHt.	45.979sft	0.052sft		
		ΔElev.	46.132sft	0.155sft		

		Dist.	14095.181sft	0.026sft		
451	450	Az.	1°37'16.1655"	0°00'00.3534"	1:581419	1:581419
		ΔHt.	30.893sft	0.060sft		
		ΔElev.	30.764sft	0.166sft		
		Dist.	15760.438sft	0.027sft		
451	441	Az.	315°57'04.5483"	0°00'00.2658"	1:770150	1:770150
		ΔHt.	-14.850sft	0.076sft		
		ΔElev.	-15.200sft	0.189sft		
		Dist.	22243.668sft	0.029sft		
96-108	96-103	Az.	0°32'37.0296"	0°00'00.0000"	1:0	1:0
		ΔHt.	12.469sft	0.050sft		
		ΔElev.	12.450sft	0.000sft		
		Dist.	11112.143sft	0.000sft		
96-108	96-111	Az.	180°22'18.5410"	0°00'00.0000"	1:0	1:0
		ΔHt.	38.839sft	0.048sft		
		ΔElev.	38.940sft	0.000sft		
		Dist.	9935.840sft	0.000sft		
433	441	Az.	91°25'54.8439"	0°00'00.3888"	1:532188	1:532188
		ΔHt.	-53.751sft	0.058sft		
		ΔElev.	-53.532sft	0.169sft		
		Dist.	16145.985sft	0.030sft		
450	441	Az.	270°50'30.3640"	0°00'00.3818"	1:541595	1:541595
		ΔHt.	-45.743sft	0.057sft		
		ΔElev.	-45.964sft	0.165sft		
		Dist.	15912.941sft	0.029sft		
450	449	Az.	6°44'41.9745"	0°00'00.3606"	1:569878	1:569878
		ΔHt.	15.622sft	0.061sft		
		ΔElev.	15.536sft	0.164sft		
		Dist.	16043.653sft	0.028sft		
448	449	Az.	172°34'12.4690"	0°00'00.3294"	1:620579	1:620579
		ΔHt.	45.512sft	0.060sft		

		ΔElev.	45.598sft	0.160sft		
		Dist.	16157.070sft	0.026sft		
448	439	Az.	287°23'00.2677"	0°00'00.3292"	1:636144	1:636144
		ΔHt.	60.567sft	0.058sft		
		ΔElev.	60.314sft	0.162sft		
		Dist.	16860.762sft	0.027sft		
448	Z85Reset	Az.	354°14'13.5155"	0°00'00.3291"	1:613508	1:613508
		ΔHt.	-12.114sft	0.063sft		
		ΔElev.	-12.239sft	0.121sft		
		Dist.	16696.440sft	0.027sft		
448	440	Az.	224°26'05.2662"	0°00'00.3085"	1:670733	1:670733
		ΔHt.	51.593sft	0.081sft		
		ΔElev.	51.421sft	0.184sft		
		Dist.	22452.733sft	0.033sft		
TBM-C86	439	Az.	290°02'01.3008"	0°00'00.8599"	1:245104	1:245104
		ΔHt.	108.248sft	0.041sft		
		ΔElev.	108.094sft	0.108sft		
		Dist.	7376.797sft	0.030sft		
449	440	Az.	269°58'11.7737"	0°00'00.3882"	1:537816	1:537816
		ΔHt.	6.082sft	0.065sft		
		ΔElev.	5.823sft	0.173sft		
		Dist.	17808.408sft	0.033sft		
439	Z85Reset	Az.	51°11'47.0551"	0°00'00.3127"	1:658852	1:658852
		ΔHt.	-72.681sft	0.065sft		
		ΔElev.	-72.554sft	0.108sft		
		Dist.	18486.223sft	0.028sft		
L-87	Chief	Az.	179°26'14.2820"	0°00'00.1294"	1:1561744	1:1561744
		ΔHt.	-18.269sft	0.205sft		
		ΔElev.	-17.770sft	0.000sft		
		Dist.	61272.623sft	0.039sft		
L-87	402	Az.	102°33'19.6784"	0°00'00.0836"	1:2478147	1:2478147

		ΔHt.	-18.594sft	0.198sft		
		ΔElev.	-18.356sft	0.224sft		
		Dist.	66129.637sft	0.027sft		
L-87	400	Az.	75°09'19.8699"	0°00'00.0897"	1:2305452	1:2305452
		ΔHt.	10.233sft	0.203sft		
		ΔElev.	10.170sft	0.215sft		
		Dist.	66631.300sft	0.029sft		
402	409	Az.	40°40'43.4586"	0°00'00.2430"	1:846770	1:846770
		ΔHt.	44.971sft	0.082sft		
		ΔElev.	44.802sft	0.198sft		
		Dist.	23641.770sft	0.028sft		
96-121	96-128	Az.	180°39'48.8233"	0°00'00.0000"	1:0	1:0
		ΔHt.	-14.504sft	0.049sft		
		ΔElev.	-14.420sft	0.000sft		
		Dist.	10518.684sft	0.000sft		
96-128	96-132	Az.	178°46'22.2595"	0°00'00.0000"	1:0	1:0
		ΔHt.	-32.727sft	0.041sft		
		ΔElev.	-32.680sft	0.000sft		
		Dist.	7217.329sft	0.000sft		